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The Journal of Nervous and Mental Disease

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The amount of text material will be the same as if you received six normal issues, because of the new double column format and the additional pages in each of these three issues.

Every effort is going to be made to have the January 1955 issue appear in January 1955.

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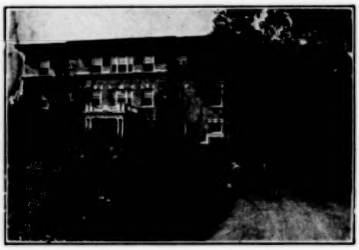

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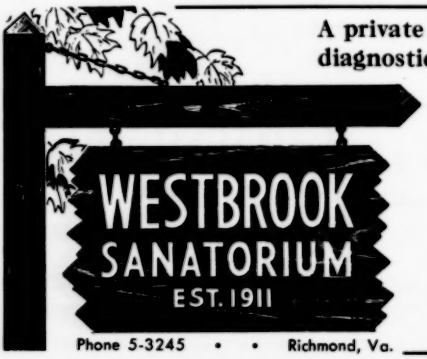

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The Journal of Nervous and Mental Disease

Vol. 120, Nos. 1 and 2 JULY - AUGUST 1954 Serial Nos. 871 and 872

TOXEMIA OF PREGNANCY AND SCHIZOPHRENIA

WILLIAM S. WIEDORN, M.D.

Scant attention has been paid to toxemia of pregnancy utilizing psychosomatic and adaptational concepts. The oft-noted similarities between toxemia of pregnancy and other diseases of known psychosomatic pathogenesis (i.e., essential hypertension) and observation of obstetrical patients suggested that an examination of toxemia from this point of view might prove fruitful. Recent work in general endocrinology and observation of patients with psychosis postpartally suggested that there might be a relationship between toxemia of pregnancy and schizophrenia. This paper is a preliminary report dealing with the initial approach to the problem through the use of the statistical method to identify whatever relationship there is, if any, between toxemia of pregnancy and schizophrenia. The technique utilized to identify any possible significant association was the statistical review of the incidence of toxemia of pregnancy and comparison in a non-schizophrenic control group, and a group which had already experienced on overt schizophrenic psychotic episode.

Considerable interest has been shown in the past in the psychoses occurring postpartally. A review of the literature suggests some hint of a possible relationship. Olshausen, in 1891, divided the causes of the postpartial psychosis into: infectious, toxic and idiopathic (37). Many observers have noted the occurrence of psychotic states posteclamptically (3, 8, 31). In the past, some obstetricians and psychiatrists have considered toxemia to be a significant determinant in the genesis of psychosis postpartally—some noting that nervous symptoms were more frequent in toxemic patients, others recording a high incidence of toxemia in patients with psychiatric and neurologic syndromes (12, 7). The following may be taken as an example of older thinking: ". . . . in certain predisposed individuals, the toxic elements of pregnancy, instead of manifesting themselves in the usual manner on the liver and kidneys, have a special predilection for the cerebral cortex" (2).

A multitude of terms has been applied to psychoses occurring in the puerperium—confusional, postpartal mania, dementia praecox, toxic-exhaustive, etc., the toxic-exhaustive type being preceded by toxemia in most cases. Smalldon, in 1940, mentioning that the term toxic-exhaustive is used much less frequently, stated: "The tendency in the last decade seems to have been to classify fewer of these cases as psychosis with somatic disease, as apparently the great majority vary little if at all from the usual nonpuerperal psychosis" (29).

Certain facets of toxemia of pregnancy raise the possibility of psychosomatic pathogenic factors. Toxemia of pregnancy (pre-eclampsia and eclampsia) is more common in women living under conditions of civilization; and varies with racial, socio-economic and cultural factors (32). Syndromes similar to human toxemia of pregnancy are found in other mammals. Bovine parturient paresis—an eclampsia-like syndrome—has been ascribed to the general adaptation syndrome, and occurs with greater frequency when the animals have been exposed to nervous stress (10). Selye, in 1946, raised the question of eclampsia as a disease of adaptation (23). Recently, the disease has been defined as one of hyperadaptation (17, 18). A close similarity between toxemia of pregnancy and DOCA intoxication has been noted (33).

Evidence has been amassed which indicates significant endocrine factors in toxemia of

pregnancy. Adrenocortical hormones increase production of renal pressor substance (16). Stigmata of endocrine dysfunction occur in a high percentage of women with a history of toxemia (35). The role of the pituitary-adrenocortical axis has been repeatedly emphasized (17, 18, 19, 22, 23). Endrocrinologic studies reveal increased adrenocortical activity in toxemics (17, 18, 30). Central neurologic complications of eclampsia occur (26, 27). Damage to the neuraxis has been produced in rats treated with an overdosage of desoxycorticosterone acetate (24, 25).

Evidence of disturbed physiology in schizophrenia has come from many sources, a few of which are of significance here. Association of schizophrenia with gross morphologic change has been noted for decades with many interpretations. Vascular change, diffuse fibrosis and multiglandular pathology have been recorded (15, 36). Psychotic factors are observed in asthma and chronic ulcerative colitis (1). Psychotic syndromes occur in Addison's (6) and Cushing's (28) syndromes, and in a setting of cortisone and ACTH administration (4). Steroid (9, 11) and stress (11, 14, 34) studies have demonstrated quantitative and suggested qualitative abnormalities of the pituitary-adrenocortical response in chronically ill, institutionalized schizophrenics. Hyperfunctional autonomic (13, 20) and emotional response (5) has been identified in early schizophrenia. Though there is certainly no clear evidence there are many suggestions that a relationship might exist between toxemia of pregnancy and schizophrenia.

Materials and Methods

The appearance of the clinical manifestations of toxemia of late pregnancy is taken in this study as the index of abnormal response to the stress situation—pregnancy. There are many factors which make toxemia of pregnancy an excellent index for such study, among which are:

1. Pregnancy is a major stress felt at all levels—from maternal enzymatic systems to interpersonal relationships.

2. The stress is definable, repeatable, of known duration, and occurs within the normal environmental setting.

3. The signs of the syndrome are three nonspecific, abnormal physiologic responses to stress: hypertension, alubuminuria, and edema.

4. The syndrome is not an organ or organ-system response, but rather is one of the total organism.

The material in this study was drawn from case records at the Charity Hospital of New Orleans. Two series of patients were selected and studied. The first series is the control series—patients who have delivered one or more pregnancies at Charity Hospital and who have not yet been diagnosed as being psychotic. The second is the schizophrenic series—patients who have delivered one or more pregnancies at Charity Hospital, and in addition have been admitted and hospitalized on the psychiatric unit at Charity Hospital for an acute schizophrenic psychotic episode.

Charts were selected by the following means: Those for the control group were selected on the basis of being signed out as "pregnancy delivered" regardless of other diagnoses. Those for the schizophrenic group were selected on the basis of being signed out as "schizophrenia" regardless of other diagnoses. The charts for the schizophrenics were then reviewed, and those patients that had delivered one or more pregnancies at Charity Hospital, were then selected for the schizophrenic series. All of the chart material was reviewed thoroughly to insure the validity of the psychiatric diagnosis. If the case was questionable, it was excluded from the study. All charts were gathered by record room personnel unfamiliar with the aims of the project.

A pregnancy was listed as toxemic if blood pressure of 140/90 mm. Hg or above, together with albuminuria or edema, developed in the last trimester of pregnancy. No attempt was made to separate the toxemias into current clinical or pathologic types. Such differentiations was felt to be not pertinent to, and beyound the scope of, this study. In the few obstetrical records that were incomplete or questionable, the pregnancy was listed as nontoxemic. The same technique was used in arriving at an impression of toxemic or nontoxemic for the pregnancies of both the schizophrenic and control series.

A number of definite and possible sources of error are introduced into a study of this type. There is probably a higher over-all incidence

TABLE I.—TOTAL DATA

	Control series	*Schizophrenic series (colored and white)*	*Schizophrenic series (colored only)*	*Schizophrenic series (white only)*
Total number of patients	54	72	57	15
Total number of pregnancies	150	155	127	28
Average number of pregnancies	2.77	2.15	2.23	1.76
Percentage incidence of toxemia in total pregnancies	22.2%	46.4%	49.6%	32.1%

of schizophrenia in the socio-economic group studied (21). It is assumed that subgroup differences within this area should be significant. Undiagnosed patients, from the psychiatric viewpoint, and those that will develop psychosis later in life are necessarily included in the control series. The patients in the schizophrenic series are only those that were sick enough to warrant admission and work-up on the psychiatric unit for an acute schizophrenic psychotic episode. These sources of error are interpreted as tending to diminish, rather than exaggerate, the differences observed between the control and schizophrenic series. Specific sources of error will be discussed as they are pertinent to the data.

Total data for the control and schizophrenic series is presented in Table I. Since all the patients in the control series are colored, and the white and colored patients in the schizophrenic series show a difference in the incidence of toxemia, the white patients have been excluded from subsequent statistical analysis, unless specifically mentioned. The difference in over-all incidence of toxemia in the schizophrenic series between the white (32.1 per cent) and colored (49.6 per cent) patient's pregnancies (though not statistically significant, P is greater than 0.05) probably represents a difference in exposure to total stress. When tested for statistical significance, the figures for the incidence of toxemia in the total pregnancies in the control group (22.2 per cent) and the colored patients of the schizophrenic series are found to be significant; P equals less than 0.001.

The mean current age (as of 1953) of 53 patients in the schizophrenic series is 32.1 years. The mean age for the first psychotic break for 57 patients in the schizophrenic series is 27 years. It should be remembered here that a special group of psychotic patients is dealt with—those that have experienced the first overt break necessitating hospitalization, in the first half of life.

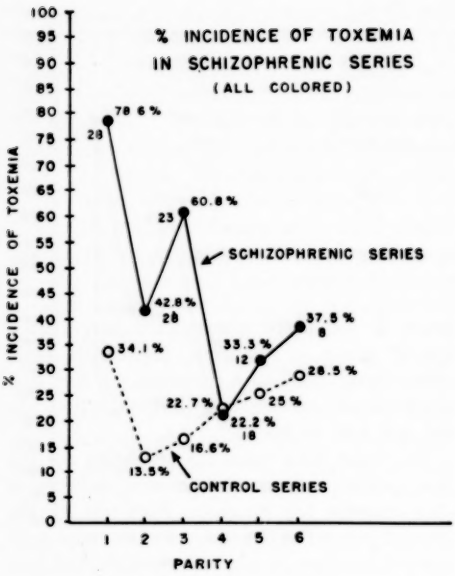
The mean time from the admission for the first psychotic break to the next delivery is 24.3 months for 12 cases. Forty-one of the colored patients in the schizophrenic series were studied for time of admission for the first psychotic break after the last delivery, regardless of parity. The mean time elapsed was 23.6 months, with a maximum time of 106 months. Twenty of these patients were admitted for the first psychotic episode within a year after delivery, and 10 within two months.

Table II contains data for colored primiparas only. The control and schizophrenic primiparous patients are presented as being parallel in terms of race, age and socio-economic status—diet, housing, medical care, etc. The incidence of toxemia of pregnancy in those who were later admitted for overt schizophrenic psychotic episodes is 83.3 per cent, and in the control group 34.1 per cent. Testing for significance reveals that P equals less than 0.001.

Eight of the patients in the schizophrenic

TABLE II.—PRIMIPARAS—PARALLEL SERIES, COLORED ONLY

	Number of patients	*Percentage toxemic pregnancies*	*Mean age*
Primiparas in control series	41	34.1%	19.9 yrs.
Primiparas in schizophrenic series; before first psychotic break	24	83.3%	19.3 yrs.



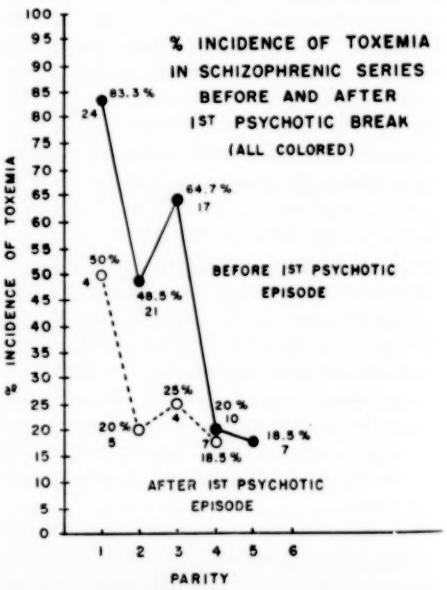
GRAPH 1

series—2 white and 6 colored—experienced the first psychotic episode during a pregnancy. In the 6 colored patients, none of them primiparous, the incidence of toxemia was 50 per cent. These patients represented 11 per cent of the total cases in the shizophrenic series. Further evaluation of this very interesting group awaits a larger series.

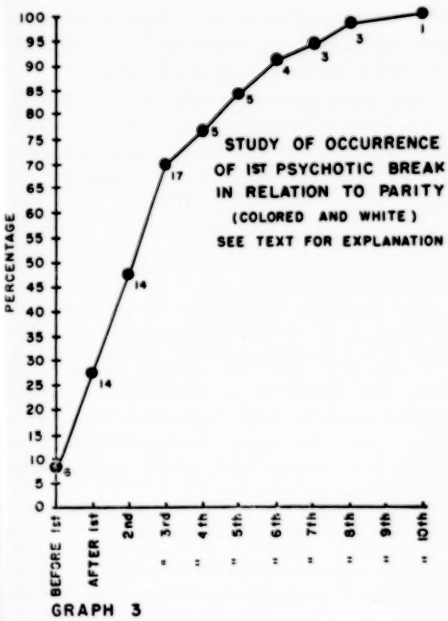
In Graph 1 the sequential change in the percentage incidence of toxemia in the sequence of pregnancies in the two groups is illustrated. The incidence of toxemia in each parity group of the schizophrenic series, whether or not the psychotic break has occurred, is shown in the upper curve. The lower curve represents the incidence of toxemia in each parity group of the control series. Testing of the figures for each parity group in the two series reveals the following: comparison of the first pregnancy, P equals less than 0.001; the second pregnancy, P equals 0.008; and third pregnancy, P equals less than 0.001. Therefore, comparison of the two series reveals an increased incidence of toxemia of pregnancy in the first three pregnancies in the schizophrenic series, which is statistically significant.

Reference to Graph 1 reveals that there is a downward trend in the incidence of toxemia in each parity group of the schizophrenic series, with subsequent pregnancies, in the first four pregnancies. Testing of these figures for significance in the first four pregnancies reveals: First and second pregnancy, P equals less than 0.001; second and third pregnancy, P is greater than 0.05; third and fourth pregnancy, P is less than 0.001. The difference between the first and second, and third and fourth pregnancy is significant in the downward trend, consequently the trend from the first to the fourth is significant statistically. Thus it is seen that not only is the increased incidence in toxemia in the first three pregnancies of the sequence in the schizophrenic series significant; but, the downward trend in incidence in the first four pregnancies is also significant. It should also be noted from references to Graph 1 that the incidence of toxemia is falling in the schizophrenic group as it is rising in the control group after the first pregnancy.

In Graph 2, the incidence of toxemia in each parity group of the schizophrenic series before the first psychotic break (upper curve) is contrasted with the incidence of toxemia in each parity group of the schizophrenic series after the first psychotic break (lower curve) is illustrated. No attention is paid to when the



GRAPH 2

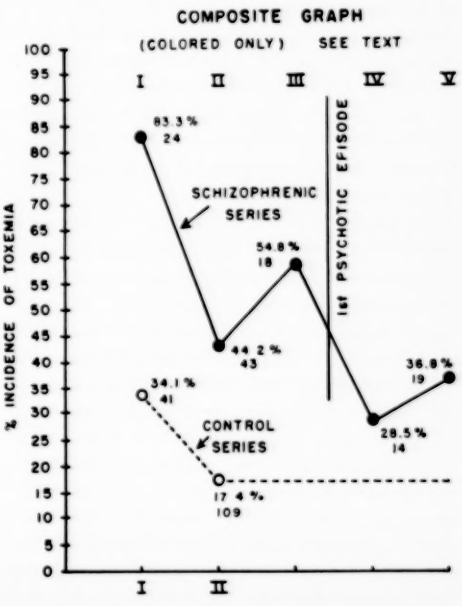


GRAPH 3

first psychotic episode occurred in any particular individual series of pregnancies—simply the question of whether or not the patient has been admitted with an acute psychotic episode is dealt with here, in terms of its effect on the incidence of toxemia of pregnancy. The significance of the curve of incidence after the first psychotic break has occurred is difficult to assess, since the number of pregnancies in each parity group is so small; however, it will be seen that the figures are roughly in agreement with subsequent tabulations (see Graph 4). The proximity of points of incidence in those pregnancies after the third is also difficult to interpret. This could be due to statistical sampling error, or more probably to the significance of the time of the first psychotic break (see Graph 3). When tested for significance it is found that the figures for the incidence of toxemia in each parity group of the two curves are not significant in difference, the number of cases being so small. However, as seen from Graph 4, the differential incidence of toxemia before and after the first psychotic break, when studied in summation, is significant (P equals 0.02).

Testing of the points of incidence in each of the four parity groups of the upper curve for statistical significance in downward trend reveals the following: First and second pregnancy, P equals less than 0.001; second and third pregnancy, not significant and, third and fourth pregnancy, P equals less than 0.001. Thus it is seen that the downward trend in the incidence of toxemia of pregnancy in the sequence of pregnancies before the psychotic break has occurred, in patients who will later be admitted for acute psychotic episodes, is statistically significant.

The time of onset of the first psychotic episode in a sequence of pregnancies, in this series of schizophrenic patients, is studied in Graph 3. This is in terms of the percentage distribution of the occurrence of the first psychotic episode after each pregnancy in the sequence. The sharp rise in the first three units (after the first, second, or third delivery) shows that the first psychotic episode occurs most frequently in the beginning of the sequence of pregnancies. This graph shows that by far the majority of these women, all of whom experienced the first psychotic episode during the first half of life, did so after one of the first three pregnancies. Comparison of this curve with Graph 1 reveals that as the incidence of toxemia is falling, the incidence



GRAPH 4

of the occurrence of the first psychotic break is rising sharply.

The examination of these patients for the likelihood of the psychotic episode to occur after each delivery is studied, the following results are obtained: It is found that 6 (8.3 per cent) occurred before the first pregnancy; 14 (21.2 per cent) of the remainder experienced the first psychotic episode after the first pregnancy. Another 14 (25.7 per cent) of the remainder, suffered the first psychotic episode after the second pregnancy. Another 17 (44.7 per cent) of those who had not yet experienced the first acute break necessitating hospitalization, did so after the third pregnancy. In other words, in this series of patients, if a woman is going to experience a psychotic episode, and has not already done so, she is most likely to after the third pregnancy. The consequences of this for obstetrics and psychiatric prognoses are apparent.

Graph 4 is a composite graph representing a study of the differential incidence of toxemia of pregnancy in the schizophrenic series, from the viewpoint of sequence. The control group is presented for comparison. The first point on the upper curve, reading from left to right (I—83.3 per cent) represents the percentage incidence of toxemia in colored primiparas in the schizophrenic series who later develop a psychotic episode. The second point (II—44.2 per cent) represents the incidence of toxemia of pregnancy in pregnancies occurring before the first psychotic break, excluding primiparous patients, and excluding those pregnancies after which the first psychotic break occurs. The third point (III—54.8 per cent) is the incidence of toxemia in those pregnancies after which the first psychotic break occurs, excluding primiparous patients. In this study, the psychotic break may have occurred in any place in a particular sequence of pregnancies, and at any length of time after the last delivery. The heavy vertical line represents the first psychotic break in this composite sequence. The fourth point (IV—28.5 per cent) represents the percentage incidence of toxemia in those pregnancies immediately after the first psychotic episode (immediately in terms of sequence of pregnancies; any period of time may have elapsed since the last delivery). The fifth point (V—36.8 per cent) represents the incidence of toxemia in those pregnancies after the first psychotic break, excluding those pregnancies which occurred immediately after.

The lower curve represents the incidence of toxemia of pregnancy in the control series. The first point (I—34.1 per cent) represents the incidence of toxemia in primiparous patients. The second point (II—17.4 per cent) and the continual line represent the incidence of toxemia in the control group in all pregnancies after the first.

The incidence of toxemia of pregnancy in all pregnancies in the schizophrenic series before the first psychotic episode is 57.6 per cent. The incidence in all pregnancies after the first psychotic break is 33.3 per cent. When these figures are tested for significance, it is found that P equals 0.02, which is interpreted as significant.

Case Reports

Many different patterns of response to a sequence of pregnancies, with various complications, were encountered in this survey of the records of these 72 schizophrenic patients, in comparison with the controls. These schizophrenic patients showed a higher incidence of abnormal response to pregnancy on more differential levels. These are histories of abortion, premature labor, hyperemesis gravidarum, and numerous admissions for false labor. A higher incidence of neurologic disease, and vascular and endocrinologic disease other than toxemia, was encountered. These data will be analyzed in detail in a later paper. The following case histories are illustrative of the type of material found in these patients.

Case 1. H.F., colored female, at the age of 25 developed mild pre-eclampsia with first pregnancy. During the second pregnancy she developed a severe pre-eclampsia with blood pressure of 160/100, edema and albuminuria. After delivery of a premature infant, the blood pressure rose to 196/114. One month after this delivery the patient was admitted to the psychiatric unit where a diagnosis of catatonic schizophrenia was made. The third pregnancy four and one half years later was uneventful.

Case 2. I.H., colored female, developed mild pre-eclampsia during the first pregnancy at the age of 15. The second pregnancy was uneventful aside from an admission for false labor. In the twelfth week of the third pregnancy the patient was admitted to the psychiatric unit where a diagnosis of schizophrenic reaction was made. In the last trimester of this pregnancy the patient developed mild pre-eclampsia, and

also was admitted four times to the obstetrical unit with false labor. The last recorded pregnancy, at the age of 25, was marked by a severe pre-eclampsia, with 3+ albuminuria and blood pressure of 170/110.

Case 3. A.M., a white female, delivered five consecutive nontoxemic pregnancies at Charity Hospital. During the fourth pregnancy she was hospitalized twice for hyperemesis gravidarum. Eleven months after the fifth delivery she was admitted to the psychiatric unit where a diagnosis of paranoid schizophrenia was made.

Case 4. O.R., a colored female, developed a severe pre-eclampsia during the first pregnancy at the age of 24. The patient was delivered of a dead seven months fetus by section-hysterectomy which revealed a Couvelaire uterus. Two years later the patient was admitted to the psychiatric unit where a diagnosis of simple schizophrenia was made. During interviews the patient dated the onset of her psychiatric symptoms to the puerperium.

Case 5. F.H., a colored female, was 18 at the time of her first delivery. She was admitted for hyperemesis gravidarum; later developed mild pre-eclampsia during the first pregnancy, and delivered a stillborn infant. She also developed a mild pre-eclampsia during the second pregnancy. The third, fourth and fith pregancies were nontoxemic. Six months after the fifth delivery she was admitted to the psychiatric unit where a diagnosis of paranoid schizophrenia was made.

Discussion

The preceding statistics suggest that toxemia of pregnancy, characterized by hypertension, edema and albuminuria, may be termed a psychosomatic disease. This concept is suggested by the statistics which illustrate a relationship between the incidence of toxemia and the occurrence of the first schizophrenic psychotic episode. The statistics are of interest in that two aspects of the problem of psychosomatic disease are illustrated. First, the changing response of the organism to a repeated stress has been studied sequentially. Second, the incidence of a psychosomatic disease in association with a psychosis has been shown to be significantly greater in incidence before the first psychotic episode has taken place.

Further clarification of this interesting association between toxemia of pregnancy and schizophrenia awaits continued work on the disturbed physiology of schizophrenia, not only after overt psychotic symptoms have appeared, but before. This preliminary report is submitted only in statistical terms in order to demonstrate the observed relationship between toxemia and schizophrenia. Later reports will present greater detail in terms of psychotic reaction types, detailed case material, and the specific patterns of longitudinal response which emerge from this study, and the nature of this stress response in the schizophrenic individual.

The differential distribution of the percentage incidence of toxemia of pregnancy in this series of cases—the over-all greater incidence in those women who later became overtly psychotic by their early thirties, in conjunction with the greatest incidence of toxemia at two points, the first pregnancy, and the pregnancy immediately before the first overt schizophrenic episode—suggests that toxemia of pregnancy, for immediate purposes at least, may be considered as a "psychotic equivalent." This term is suggested to imply an equivalence on a physiologic level of response of the organism. The term is thus applicable to physiologic states or syndromes which precede or follow psychotic episodes, and are associated with them, either sequentially or casually, or both.

It is difficult to imagine a physiologic response of such depth, one that effects and involves the total organism, and which has such dire consequences for the individual, as being associated with any specific constellation of emotions, or any specific dynamic construction. The relationship here is not reciprocal, as has recently been attributed to psychomatic disease in which psychotic factors may be isolated. The relationship is certainly not one of summation, and is not complemental.

The incidence of toxemia of pregnancy, and the occurrence of the first overt schizophrenic psychotic episode, may be taken as two loci, which are identifiable in an adaptive process. This adaptive process, as postulated, exists in the main stream of total adaptation of the individual organism. The characteristics of this adaptive process may be crudely outlined at this time, as follows:

1. The occurrence of an abnormal physiologic substrate in a woman potentially or overtly psychotic;

2. With the "stress" of pregnancy, the development of a hyper-functional hyperadapitve disease in a high percentage of cases;

3. After delivery, the appearance of severe schizophrenic symptomology—at any time from days to years after delivery;

4. With presumptive evidence of progres-

sion of the adaptive process—the first psychotic episode—a decreased incidence of toxemia of pregnancy.

The identification of isolated somatic or psychologic factors in a pathologic process reveals little concerning total pathogenesis of the disorder. Toxemia of pregnancy does not cause schizophrenia. Schizophrenia does not cause toxemia. The demonstrable sequential relationship may be interpreted in the following terms of a progressive adaptive process. An abnormal response (toxemia of pregnancy) to a specific stress (pregnancy) is identifiable in a general response pattern of the organism (schizophrenia). With continuation of the process (occurrence of the first psychotic episode) differential changes in total response are identifiable (sequential change in the percentage incidence of toxemia).

Summary

Two series of patients are presented for comparison of differential incidence of toxemia of late pregnancy. The two series consist of, first, the controls who have not been admitted for an acute schizophrenic psychotic episode; and, second, a schizophrenic series, comprised of patients who have been hospitalized on the psychiatric unit at Charity Hospital for an acute schizophrenic psychotic episode. Statistical evaluation of the results derived from comparison of these two series has revealed the following facts.

1. A significantly higher incidence of toxemia of pregnancy was found in the total pregnancies of the colored patients in the schizophrenic series.

2. A significantly higher incidence of toxemia of pregnancy was found in a group of primiparous patients who later were admitted for an acute schizophrenic psychotic episode, in comparison in parallel series with a control group.

3. A downward trend, which is statistically significant, was found in the incidence of toxemia in the first four pregnancies of the patients who were admitted for acute schizophrenic psychotic episodes.

4. A significant difference was found in the high incidence of toxemia before the first psychotic episode, and the lower incidence afterwards.

5. Furthermore, in this series of patients at least, toxemia of pregnancy is defined as a psychotic equivalent on a physiologic level of response.

6. Finally, a sequential change of abnormal physiologic response in relationship to the emergence of overt schizophrenic symptomatology is illustrated, and is described as an example of progressive adaptive process.

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THE GANSER SYNDROME IN PSYCHOSES

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Since the description of this syndrome in 1897 by Ganser (4) there has been no uniform understanding in the literature of the nature and significance of this symptom formation. Ganser referred to this illness as a "specific hysterical twilight state, the central feature of which is talking past the point." His experience was limited to the examination of prisoners on remand for trial where the value of simulation to avoid punishment was apparent. As recently as 1942, Stern and Whiles (7) thought the syndrome quite rare except in prisons and suggested its origin "in people who, although mentally deranged and not realizing this, wish to appear so." Ricklin (1940), on the other hand, believed it to be more common in noncriminal cases, and spoke of the "repression of painful experiences." Noyes (6) stated that the patient is usually in a situation that is solved or mitigated by irresponsibility, and without being aware of it, actually develops a mental disturbance. He thought it was clearly a hysterical raction in which the circumstances were such that the advantages gained by a mental disability were greater than by physical disorder. Bleuler (2), in 1937, was the first to believe this to be an acute syndrome superimposed upon a chronic schizophrenia. Because it is patently difficult to simulate the popular lay concept of the insane talking nonsense, Anderson and Mallinson (1) thought that the Ganser case employs the approximate answer response. In their estimation this was promulgated by a severe schizophrenic thought disorder.

In the maintenance of normal ego economy, the psychoanalytic doctrine postulates the existence of an elaborate veil of defenses acquired throughout the entire developmental history of the person. Experiences with the mentally ill person oblige a similar assumption, i.e., the acquisition of a defense system of mechanisms designed in the interest of preserving the waning economy of an impoverished or diseased ego. In our work with the psychotic personality, we daily encounter pathogenic defenses such as projection, denial, and other defenses against threatening affects which are the precursors to disastrous regression. In the borderline twilight of an early regressing illness, one finds transient mechanisms attempting to deal with unacceptable instinctual issues. I would like to regard the Ganser symptom in this category of defenses, and to consider its appearance as a feature of serious portent and a manifestation of regression. Contemporary dynamic psychiatry perforce regards the "psychotic" ego as still in dynamic status, in endlessly shifting balance, requiring constant reenforcement by defenses against threat from within and without the ken of constricting ego boundaries. The Ganser symptom may prove to be one such mechanism, useful for its ego-sparing value, albeit too often transient and unsuccessful in its purpose and goal accomplishment.

In the case protocols to follow, one example of frank malingering is contrasted with 4 other patients who had utilized the Ganser complex in varying degrees. One case study has been reported elsewhere (5).

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Case Reports

Case 1.—Ganser Syndrome in Melancholia.—S. M., a 49-year-old Italian male of pyknic habitus. One brother was a suicidal and another a penitentiary delinquent. The patient had enjoyed an apparently normal adult life adaptation. The onset of mental symptoms took place shortly prior to admission to the Elgin State Hospital as a direct reaction to his son's imminent induction into the Armed Forces. The patient had run away from home on several occasions within one week, developed an amnesia and general unawareness. Upon admission, he presented a picture suggestive of transcortical global aphasia of the organic; it was evident that he possessed more awareness than he could permit himself to betray. To all questions he assumed the stock reply of "I don't know," at other times showing echolalia and echopraxia, or uttering ludicrous and irrelevant remarks. Upon persistent leading interrogation, he then employed the Ganser type of response: "1 plus 1 is 3, 2 plus 2 is 5; 2 plus 1 is 4." He showed complete right-left hand disorientation without the slightest hesitancy, and upon command

to indicate his thumb, invariably indicated his index finger. He referred to each other finger as a hand, and read the letters of the Snellen test charts in a paraphasic manner. All other responses were of the approximate variety of the Ganser type of *Vorbiereden*. When presented with a tray of food, he simulated unawareness of the purpose of a spoon and food, but when provoked or threatened, properly assumed the function of eating and indicated the correct use of each implement. When commanded to partake of the food contents in each of the five compartments in the tray, he invariably carried out correctly the instructions just previously given in the nature of a rotating clock—always just one step behind. Throughout this entire performance, his demeanor was one of mild perplexity, more often of stupidity, without at any time having betrayed any depressive feeling tone. Following the completion of this examination, he reversed his performance and asked the attendant that he be granted a ground parole, inquired as to how soon he might go home and how he should proceed to do so, confirming the impression that contact with his environment was intact. The following afternoon, he again resorted to the stock reply of "I don't know," and following provocative questioning again reverted to the approximate responses issued promptly, identifying a fountain pen as a pencil, etc. He referred to a cigarette as a rock and spelled it "out." *Man* was spelled "home," *boy* as "go," and *Sam* as "family." Of dynamic interest is the fact that the words he spelled in sequence referred to his strong yearnings to be discharged and return to his family. He referred to a *coat* as "trousers," *a quarter, nickel,* and *penny* were identified severally as "four cents." At this point, the examiner assumed a stern and austere manner, intimating to the patient that he might be deliberately simulating and that he would remain in this institution until such time as his performance assumed the semblance of the more normal. He then immediately assumed the normal and gave prompt and correct responses to all tests listed above. For several days, however, he showed a recurrent tendency to relapse into the Ganser response and at no time betrayed or indicated awareness of anxiety or depression over his state. At one point, he accounted for his having given incorrect responses as due to "some fear made me think I should." The interesting sequence to this daily attack upon this symptom-complex formation, was that he had no alternative but finally to relinquish the use of this quasi-ego sparing mental mechanism. For the first time while in this hospital he now exhibited the frank features of profound suicidal melancholia which then persisted in a uniform picture for many weeks, until successfully terminated by a course of electric shock therapy with full restoration of insight and recovery.

Although one is initially wont to regard the symptom facade portrayed above as a deliberate willful attempt at malingering, one cannot but be impressed with its ego-sparing value in the face of a more difficult and humiliating depressive illness with which he was really deeply concerned. It is my belief that in times of such intense stress, a need for pulling together of a psychic economy draws all available mechanisms to act as a buffer for the ego against onslaught from within or without. One must carefully select the patient who can be dealt with in so disarming a manner as that described above, recognizing the devastating effects that might ensue in one who does not possess strong ego resources. For this patient, the use of the Ganser syndrome as a mental dynamism had only immediate and limited sparing value involving postponement; but in the long-term sense it would deny the patient the need ultimately to face the full brunt of his depression in the interest of more complete restitution.

Case 2.—This is a young man whose admission picture was characterized by pathetic, aimless wandering about the wards. He was perplexed, misidentified his surroundings, but was quiet, tractable, and responsive to kindly management. During the first 24 hours of his hospital stay his condition had constituted no problem in nursing management. When interviewed 24 hours later, he at first gave irrelevant responses to questions, was soft-spoken in manner, then became entirely mute, his demeanor revealing an increase in suspicions of the surroundings. With continued elementary questions the patient then burst into the use of approximate answers. He performed simple addition problems up to ten rather well and promptly, but when this series was repeated he began to perseverate, e.g., "2 plus 2 equals 2, 3 plus 3 equals 3," and later gave the classic approximation answers of the Ganser type: "12 plus 9 equals 20, 13 plus 14 equals 24, and 2 plus 2 equals 5." In answer to more directive query he then became frankly ludicrous, and began to tire rather rapidly when exposed to more provocative type of repetition in the questions posed. Moreover, he was at the point of overt anger and then felt obliged to willfully evade all further queries. Several moments later he professed complete amnesia of all events leading to his admission to the hospital. (There was an intolerable situation that involved his wife having left him rather abruptly one month prior to admission, and during this entire month the patient is described by others as having aimlessly walked the streets in search of her.) As the days advanced on the Receiving Service there was a lifting of the clouded state and a disappearance of the apparent disinterest. He now became anxious, fearful of his surroundings, increasingly restless, bewildered, and finally terrified. While at first he alluded to some olfactory hallucinations, he then assessed to this impression definite paranoid trends. The above Ganser type of response had serious por-

tent as a prelude to the more serious psychotic break that followed. Coincident with the relinquishment of the Ganser adaptive mechanism, the patient then disintegrated and succumbed to the frank psychosis that was unquestionably of a schizophrenic character and required considerable treatment. Subsequently he improved to a point where he was able to leave the hospital.

Upon his later readmission the patient was in a dangerously violent state. He made a murderous attack upon attendants and patients following which he promptly confessed, was contrite, spoke of an overwhelming impulse to destroy and to kill others upon his return to the hospital. During the interim between admissions, the patient was described as wandering about in futile search for his wife. The case illustrates the evanescent appearance of the Ganser symptom that purports to stave off the more dangerous break about to occur. The clinical appearance was that of a twilight state that was ineffective in resolving immediate issues.

Case 3.—This is a case of catatonic dementia praecox. The patient is a 23-year-old married Negro. His marriage was characterized by two years of incessant discord, having been more often separated from his wife than not. He was discharged from the Navy for reasons of mental illness. Overt psychosis appeared 10 days prior to his hospitalization, during which time he talked irrationally; had expressed numerous foolish ideas, believed that he could perform wonders, that he walked like Lincoln, and talked like Roosevelt. He believed that the psychopathic hospital was designed for the treatment of homosexuals, maintained that he was God, dreamed that he had a blue baby, and that he could do anything a woman could do. Upon his arrival at the Elgin State Hospital he was in normal contact, properly oriented, without showing any sign or symptoms of overt psychosis. For three days this young man made an exemplary adjustment and then promptly slipped into a catatonic stupor, initially regarded by observers as a hysterical state. A rapid sequence of events followed. The patient walked rather breezily into the examining room, proudly proclaiming that he had recovered total awareness, then proceeded to tell the examiner that he was totally "blank." Testing revealed definite simulation. He demonstrated right-left hand disorientation, and when asked to perform simple finger tests in apposition he proceeded to do the opposite, always demonstrating a rather remarkable quality of alertness. "Two plus 2 equals 5, 1 plus 1 equals 3," became a stock type of approximate answers. Another doctor entered the examining room and the patient proceeded from one device to another, pointing to his ears to indicate sudden deafness, then became "blind," and suddenly developed a "flacid paralysis of all limbs." He became mute, uttered guttural responses and then indicated through gestures (no longer paralyzed) that mutism was no longer his own fault. He showed complete insensitivity to the application of noxious stimuli and exhibited no pain withdrawal reaction whatever, even when pricked with pins or touched with a flame. He suddenly forgot his recently acquired infirmities and began talking in a normal, rational manner; later he relapsed into complete insensibility in direct relationship to the type of questions asked of him. He later stated he was a case of amnesia, unable to identify himself at all. Under the influence of sodium amytal all visual, hearing, and motor difficulties were abolished, but he continued to give the typical approximate answers of the Ganser type, e.g., "2 plus 2 equals 5." Strangely, the 100-7 test was performed flawlessly. It seems as if the mental disease process was itself in a state of such disequilibrium or instability that it "does not know which way to turn." Although the reaction appeared largely to be on the conscious level, yet it could hardly be regarded as of the nature of malingering. It had the expression of more serious impending illness. The examiner dismissed him from the room only to re-examine him 30 minutes later when he appeared perfectly normal, was friendly, animated, and now indicated that he was aware of all that had previously transpired, but he felt motivated for strange reasons. He stated that just prior to his admission that he had "blown his top" and developed a sudden sense of guilt that he was doing things wrongly, contrary to his mother's teachings. Whereupon he decided that, in order to redeem himself, he would have to "reverse" his conduct so that "right is right, and wrong is wrong. That is why I had to raise my left hand when you told me to raise the right one, and I had to do things the opposite way. It seems as if in order to do the right thing, I had to do it wrong. I could not help myself. When I first came in here I was trying to tell the truth about things but I was ignored and everybody pushed me away. I then figured I guess I am doing things wrong, so I had to do them the opposite way and that is why I went into the deep sleep, only because nobody paid any attention to me. But that didn't seem to work either, so when I talked to you this afternoon, the reason I answered 2 plus 2 is 5 is because this was the only way it seemed to me I *could combine the truth and a lie at the same time.*"

Therein lies the crux of the so-called approximate answers so characteristic of a Ganser state; it gives confirmation to the markedly ambivalent and unstable character of a mental mechanism. With a mental disease process or disorder in statu nascendi this technique may be invoked in emergency to shield the ego from threat. Three days later this patient suddenly went berserk, ran up and down the halls in motor flight, and butted his head against attendants. In the days that followed, his speech became increasingly disorganized and dissociated. He felt it his duty to organize young boys and girls into a musical organization, and that he was ordained by God to perform a special mission. God had told him so in person. He was under the impression that his wife was actually a man and constituted a threat to him. He anticipated that his son would grow up to be a famous person. As the days passed the patient became increasingly surly, wary, dangerously unpre-

dictable, and finally impulsively combative. All manifestations of the Ganser type of response had completely disappeared. He now volunteered the information that he was living in a dream world, "preoccupied with crazy ideas. It seems that I had a special mission to do to others and to do what my mother said. At times I felt that I was paralyzed and at other times it seemed that terrible things were going to happen to me and all the world. I wanted to prove something at home. My grandmother told me I couldn't be Christ but I could be like him. I thought I could prove something by making the sacrifice and it would be all worth while in the end." This spontaneous comment was accompanied by an outburst of tears. There was no longer any question that this reaction was of a catatonic nature and it was now more apparent than ever before that his resources and near-surface devices had been utterly exhausted. It appears that when he relinquished the temporary advantage of the Ganser symptoms, ego integration then entered into a state of complete disarray and the fragmented psychotic picture came into bold relief. For some time this patient continued to be impulsively combative, but as time went on he responded ultimately to electric shock treatment and was paroled home approximately five months following his admission. To our knowledge, this patient was making an excellent adjustment for three months following his admission.

Case 4.—*E. H.* A 44-year-old white male, free of somatic illness, admitted to Elgin State Hospital July 13, 1945. The father was an alcoholic personality. The patient had completed two years in a Catholic seminary but then relinquished the idea of becoming a priest and from then on became a railroad worker. He is said to have been pampered excessively as a child and much was expected of him by his parents who were evidently brilliant and had achieved high stations in life.

Following his marriage ten years ago, the patient begun to drink excessively and prior to his admission had not worked for a solid year. One year ago he suddenly became fearful, thought people were against him, stopped drinking, and remained confined to his house; becoming hermetically sealed from the world of reality. He had become increasingly fearful for his life, entertained the paranoid impression that others regarded him as a "stooge" and "spotter." He excluded members of his own family from his delusional framework of ideas. The patient was the only boy in a family of seven children, and the mother had been invalided for ten years because of heart trouble and arthritis. As a child he was a brilliant lad and attained the highest graduation marks. During his marriage the patient had been inclined to consider that his wife had paid entirely too much attention to the children and preferred them to him. This was in keeping with his lifelong competitive anxiety with regard to other people; persisting in his belief that all others were more capable than he, the inevitable outcome of the fostering attitudes of his childhood days. It is of interest that one year prior to admission when he suddenly decided to retire from gainful employment, he did so under the impression that he had suffered a severe heart attack and was no longer able to return to work. The academic and social levels which he had attained in his adult life were in obvious contrast to those of his parents and incommensurate with their expectations. Because of anticipation of failure, he had early in his adolescence begun to lose interest in his further development, alarmed that he would never quite approach the status of his parents and would lose the love of his primary objects. The patient openly acknowledged his childhood dread of his father who represented a continuous retaliatory threat. All counteraggressive impulses toward the father were necessarily renounced or disavowed in his childhood. In the study of his dynamics it was apparent that the mechanism of repression had vacillated in its effectiveness, but had for the most part failed in function at the time of greatest stress. The Ganser syndrome made an appearance principally for its ego-supporting value and erased from awareness inner destructive threats. On the day of admission to this hospital the patient appeared bellicose, surly, and preoccupied. He co-operated properly for the elementary physical examination and appeared to be in normal contact concerning such questions as involve orientation and general information. He seemed, however, to tire rapidly and soon began to employ the stock reply of "I don't know," in the manner of one who does not choose, at the moment, to be disturbed or questioned too severely. He discontinued this practice when censured mildly after carrying this attitude to the extreme and the ludicrous. He then suddenly blurted out "I've got to get back to my wife and children." He related having remained home for a year, afraid to go beyond the confines of his home as he had felt he was pursued by men with whom he had been on a drinking spree one year previously. He acknowledged having been a heavy drinker for many years but had not touched a drop during this past year. He denied hallucinatory experiences and refused to elaborate further on the ideas of persecution. Interesting was the fact that during the neurologic examination the patient failed to co-operate properly, at times definitely feigning stupidity. He insisted that he was seeing double and in the performance of the finger-to-nose test flagrantly exhibited poor performance, touching all other parts of his facial anatomy but the nose. He made no effort whatever to correct his errors in spatial judgment. When strongly reinforced, however, he immediately performed properly, touched the tip of his nose without any semblance of ataxia. This was also true of the Romberg test. A spontaneous comment of his own occurred in the presence of another physician, called in to observe this phenomenon, at which time he suddenly blurted out "Do you think I am shamming?" and "What is this about being able to perform better than I have been doing?" and "What is the charge held against me?" Nothing had been said in his presence concerning his type of responses; yet the patient himself suspected that he ought to correct his performance when

under pressure of surveillance. It might be noted, however, that he did not use the approximate answers in arithmetical problems which he performed correctly. This patient had, under the appropriate stress, become aware of the futility of the devices that he was employing, obviously intended to deceive others as well as to deceive himself. This type of defense is closely akin to the Ganser type of syndrome. His paranoid type of thinking was elicitable under the influence of sodium amytal. From this point on, the patient's psychosis remained on the overt level and he then went on to the use of psychotic defenses. At a later date he was able to perform the finger-nose test quickly and properly without the previously noted practice effect which appeared to be so close to the conscious level. It would appear in this type of case that a psychotic individual who continues to be without inner rest may find it necessary to employ a Ganser-like symptom to negate from awareness the acceptance of a mental disorder, or to postpone the same.

The official staff diagnoses established was dementia praecox, paranoid type, of long standing.

Case 5.—A 22-year-old colored boy, athletic in habitus, free of somatic illness, was admitted to this hospital for the first time. The patient is one of twins and apparently the less intelligent of the two. Family history is negative for nervous or mental disorders. Birth and development were apparently normal. The patient was reared by his grandparents and later attained fifth grade in schooling, did some farming, was irregularly employed prior to his admission into the Army. He is said to have been ambivert in personality makeup. Since his release from the Army, which was occasioned by the development of a nervous state, the patient had been unable to be gainfully employed, became preoccupied with varying somatic references, suffered nightmares, nocturnal vigil states, and sundry neurasthenic symptoms.

He was of defective mental development, apparently tolerated the rigors of the camp milieu with difficulty, and found refuge in utilizing elementary forms of escape into symptoms common to the lay person, and otherwise made naïve efforts at simulating neuropsychiatric distress, with which he had undoubtedly become familiar while under Army observation. This particular reaction type has been considered by military neuropsychiatry as occurring rather frequently among defective colored individuals who seek to be separated from the responsibilities of Army life; yet, in our patient's case achieving his freedom did not fully suffice. Moreover, this individual received disability compensation for some time, which only augmented his willingness to remain "devoted" to attention-gaining symptoms. This impression was confirmed by a rather remarkable improvement during his stay here, coincidental with the cessation of monetary gain. He then expressed a normal degree of optimism and frankly acknowledged having magnified his previous symptoms for whatever advantages that might have accrued.

Comments

Regression is a means of defense allowing the ego to become more passive. The prerequisite to its occurrence is a weakening of ego organization. Consequently, regression "happens to the ego" (3) rather than the ego playing an active role in the erection of newer defenses. Psychotic symptoms are often direct expressions of this regressive disintegration which recapitulates in reverse those level differentiations of the personality acquired through the entire mental development from childhood (a de-differentiation). The deepest form of regression represents a resumption of the oldest type of defenses: blocking of the ego and a reversion to primary narcissism. From this end of the gradient to the nonregressing ego of normality we may observe infinite forms and degrees of ego dissolution. The accurate differentiation between neurosis and psychosis clearly depends upon whether or not in the process of withdrawal from reality, object relationship is preserved at all.

Perpetual effort at restitution (toward objects) is universal and is observed even in the hebephrenic who can but for a fleeting moment "look and eavesdrop" (Fromm Reichman) at reality in short-lived object transferences. I would like to regard the Ganser symptom not only as an expression of defense and retreat, but also as a reconstruction, a last-ditch effort to preserve the ability of the ego to invest in objective reality (actually by taking some part in it.) The medium of approximate answers allows this to become possible, as if to deny the impending dissolution, i.e., "it is not true that I am irresponsible and no longer capable of speaking with sanity and am in full control of inner pressing forces." Perhaps this is what the patient above meant by combining a lie and the truth, thereby remaining in touch with the outside. The Ganser type of response takes on the appearance of extreme ambivalence, with representation close to the surface of awareness.

Because this type of patient appears clinically to be in a better state of contact than he would have others believe, one is invariably attracted to the proposition that the patient may be simulating mental illness in the manner of the malingerer. Clinical experience, however, with the malingerer (as in Cases 4 and

5) indicates clearly that this form of disturbance is more surely under full volutional control and awareness at all times, and that under appropriate pressure the ego ecounters no difficulty in completely disavowing and renouncing the simulation without suffering any serious alteration in personality; nor is he obliged to seek other substitutive mechanisms for the expression of important emotional vectors. The malingerer can be completely disarmed, without in the least compromising ego integrity. As has been developed in the case studies above, one finds that this is not true in the Ganser state in which these symptoms, albeit appearing to reside within the sphere of volutional manipulation, actually come to represent a resolution of conflict on unconscious levels. Of conspicuous interest is the extremely transient nature of these symptoms—the invariable prelude to a psychotic situation of more grave portent to follow. Invariably this syndrome proves to be ineffectual in forestalling regression to primary narcissism, that stage in infantile development before final differentiation of ego and non-ego take place. In the malingerer, the ego is not confronted with impending catastrophe, as is true in cases of a psychotic course of events. Freud stated quite clearly that the inner perception of loss of object relationship (anticipated unconsciously) is one of the earliest fantasies in early schizophrenia and that the world of balance comes to an end. The Ganser symptom may be discerned as one of the earliest manifestations of "indistinct ego boundaries, indistinct apperception of objects, and a deep oral ambivalence towards the universe of objects" (Fenichel). The Ganser syndrome is the result of the withdrawal of the libidinal investment in the world of things, and then *an archaic attempt to regain contact with the world.* (8). The more common echolalia and echopraxia of the child and the mentally ill are also primitive attempts to get in touch with the world of things by a process of imitation instead of identification. Approximate obedience, truly a pre-stage of automatic obedience of the passive schizophrenic, may correspond to the "imitative fascination in infants" (Fenichel). The Ganser symptom can be regarded, then, as a restitutional symptom, an early effort to re-establish something like a mimic-adaptation; but its force proves inadequate, and ego strength is abandoned to pave the way for the psychotic break from reality.

Often enough one witnesses theatrical and ludicrous behavior in the early hours or days of an acute mental excitement; soon relinquished and replaced by the more typical features of a psychosis. Does this initial acting-out in the dramatic or silly manner not seem to symbolize the patient's effort to negate from awareness the seriousness of his developing mental illness, and his hope to hold together by contact with reality? The other facet would take into consideration that this acting-out also represents the patient's frantic effort to objectify his experiences in his eternal striving to relate to object investments as a protection against impending dissolution. All face-saving employment of noblesse oblige must, consequently, help the patient to deceive not only others but himself in the main. Children often employ the ludicrous or approximate answer in order to attract desired attention or to evade responsibilities, more often the former. Keen scrutiny and attention to the earliest manifestations of a developing mental illness may reveal a higher incidence of Ganser-like quality of responses and behavior. One can more reliably measure then the character and quality of the regressive mechanisms at play, the profundity of reversion to inferior modes of adaptation and one can more intelligently quantify restitutive capacities in the patient. Prognosis as to the ultimate course of the illness is often more intelligently evaluated in the earliest hours or days of a developing mental excitement than at a later time when conflict has been resolved at more elusive or inaccessibly-adjusted levels. In the process of regressive de-differentiation, the Ganser syndrome plays an early role in an effort to preclude ego deterioration to lower and more primitive levels. It was postulated by Freud that the ego inherently fears regression and yet does so paradoxically; although there are primary neurotic advantages in regression to narcisstic levels and freedom from external responsibilities, nevertheless the patient inherently dreads the prospect of being flooded with his infantile fantasies and emotional experiences, and hence clings frantically to object investments.

Conclusions

1. The Ganser symptom can be looked upon as an indicator of serious disturbance in personality integration.

2. One can expect to discern this feature early in a psychotic development either as an immediate precursor (a pre-schizophrenic defense), or appearing while the psychotic process continues in statu nascendi.

3. When differentiated from frank simulation, it invariably presages a psychosis to follow.

4. The Ganser syndrome is an adaptive defense that is purposive but unfortunately ineffectual; yet its delineation permits insights into the fundamental disease entity underlying the personality, as well as being of value in prognostic evaluation.

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PSYCHODYNAMICS OF CHRONIC ALLERGIC ECZEMA AND CHRONIC URTICARIA

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Why anyone develops chronic allergic eczema (also known as atopic eczema) or chronic urticaria is still a complicated problem which continues to baffle us. While some observers still regard these disorders as either somatic or psychologic in origin, most investigators are convinced that the best approach is a psychosomatic one. This idea was elaborated and confirmed by Stokes and Beerman (1) in a review of the literature in 1940 and by myself (2) in 1948. However, to observe that psychologic factors play an important role in the course and genesis of these illnesses is not enough. The task ahead of us is to discover what specific forces are involved. Up to the present, there is scarcely any conflict man is heir to that has not been implicated in these disorders. My own experience, as one would expect, showed that the more intensively I treated a patient, the more numerous seemed the unconscious sources which could be supplying the psychic tension involved in the dermatoses. The puzzle I set out to solve was, which one of the numerous conflicts present was in casual connection with the signs and symptoms.

My aim in this paper is to present some evidence which indicates that the most specific psychodynamic finding is guilt and anxiety related to hostile aggressive impulses. Over and over again I was able to observe that an outbreak occurred in a situation where the mobilization of these drives was so intense, that the patient's usual defenses were no longer adequate to stem the tide. For a long time I thought that erotic impulses were also involved, but the more I studied these people, the more I became convinced that this was only a facade and that it was the hostile aggressive component alone that supplied the tension in the genesis and course of the disease. Eczema and urticaria are presented together in this paper, not only because they are closely allied in that hereditary, constitutional and allergic factors are considered most significant, but also because as will be seen later, the specific psychic factor seems to be the same. Not infrequently both types of lesions are seen in the same individual at the same time.

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Case Reports

Case 1. The patient is a 32-year-old married man who has had numerous exacerbations and remissions of eczema since earliest infancy. On many occasions the illness was so severe that hospitalization was necessary. The present exacerbation has lasted for nine months during which time he was hospitalized twice with little or no relief. It started one month after his marriage. For months before he proposed he was in torment about whether or not it would be fair to get married since there was always the possibility of future exacerbations with the burdening effects on his wife and because he was convinced that his children would inherit the disease. Finally, with much trepidation, he confessed all this to his girl friend who promptly reassured him that she cared not a whit about such possibilities and shortly afterward they were married. His wife was a shy, timid girl frightened about sexual intercourse during which she experienced much pain. The patient felt responsible for this and blamed himself constantly for being too rough and forceful despite the fact that he was extremely gentle. Also about two weeks after the eruption started his father suffered a mild concussion which kept him in bed for a week. The patient was sure his father was going to die and since then has become obsessed with the idea of this happening.

As far back as he can remember he was closely attached to his mother. In addition to the emotional attachment, the very mechanics of the treatment of his illness demanded a close physical tie. She rubbed ointments all over his body two and three times a day. Because he would frequently awaken her at night, she kept him in her room until he was ten. Also his father, a traveling salesman, was away from home for long periods of time which reinforced his proprietary feelings toward his mother with all the conflicts involved. As a child, he consciously hated and was fearful of his father. On a number of occasions, when his father suggested that he be hospitalized, the patient was certain that the motive was to get rid of him permanently and he would beg his mother to intercede. He cried bitterly that it was his father's fault that he was ill in the first place, that he didn't ask to be born and wished

that his father would go away on a trip and never come back. This was followed by feelings of guilt and he thought it was his fault that his father had to leave home to make a lot of money to pay for his illness. He remembered especially that if his father was ill, say with a cold, he blamed himself for costing so much for doctor bills that his father couldn't afford to eat enough which made him sick. I have been treating this patient psychotherapeutically for the past two years during which time I have observed a number of exacerbations and remissions. Invariably the exacerbation occurred when he was so threatened by unconscious guilt over his hostile impulses that his usual defenses of projection and reaction formation could no longer maintain his precarious equilibrium. It was literally impossible for this man to express any conscious hostility. The slightest interpretation that he might be angry at someone would evoke the most vehement protestations and denials. (In this connection the skin eruption plays an important defensive role but since this topic deserves a chapter of its own, it will not be discussed here.) A recent example of such an episode follows: His skin had been in good condition for six months when he and his wife decided to go away for a vacation. Just before leaving he was told that his father was advised to have a prostate operation in the near future. A week before his vacation was over, the anxiety that his father would undergo the operation and die while he was away became unbearable. He cut short his trip and returned to find his father totally unconcerned and with no intention of having any operation. Now he became alarmed that his father would die from nonintervention and after a week of unsuccessful effort to get his father to a hospital, an acute exacerbation occurred.

Case 2. The patient is a 26-year-old married woman suffering with an acute exacerbation of eczema for the past two years. This was the first attack in 12 years, the last outbreak having occurred when she was 14 and lasting only a few months. The present eruption occurred under the following circumstances: Her fiancé had been in the Army, overseas, for a year when she realized that she was no longer in love with him and went out with other men. This made her feel guilty and she decided to break off the engagement but her mother forbade her to do it until his return and she didn't dare disobey her mother. To make matters worse, wishes that he be killed in action broke through into consciousness and compulsively she was forced to pray for his safety long hours at a time. In this setting the rash broke out. With dermatologic treatment it cleared up to a great extent with the exception of some lichenification in the antecubital and popliteal areas. A year later her boy friend returned and the engagement was terminated by mutual agreement. Not long after she fell in love again, and this time married. On her honeymoon there was a full-blown exacerbation of the eczema. This time dermatologic treatment was unsuccessful and she sought psychiatric help after reading a popular book about psychosomatic medicine. Since she experienced much anxiety in connection with sexual intercourse and would get frenzied attacks of pruritus immediately thereafter, it seemed at first that guilt over her erotic feelings was most responsible for her rash. However, as psychotherapy progressed, it became more and more evident that the focus of her guilt and anxiety was hostility toward her mother. She was aware of the hostility but would never dare express it. On the contrary, she was oversolicitous of her mother and never crossed her. The core of the hostility was sibling rivalry and competitive feelings for her father's affection. As the time of her marriage approached, she felt certain that her mother was against it. A number of obsessive compulsive symptoms developed. If she left the house without kissing her mother good-by, she would have to return to do so when she recalled it no matter where she was. Also, she repeated long involved prayers for her mother's safety and health every night before going to bed. Marriage reawakened primitive destructive fantasies toward her mother with the accompanying guilt and anxiety. Another example of her unconscious guilt and its relationship to the skin eruption occurred during pregnancy. She was still under treatment at the time and her skin had been clear for many months. As soon as she was sure she was pregnant she became depressed and her eruption returned. Since she had only agreed to become pregnant because her husband had been expressing a desire to have a child for many months and she was frightened of losing him if she didn't agree, she felt certain that all he cared about was a baby and not her. Once the baby was born she would have to play second fiddle. Not only was she angry at her husband but death wishes toward the baby became conscious.

Case 3. The patient was a 23-year-old married woman who was suffering from a severe attack of allergic eczema of six months' duration. She was referred because there had been no relief with dermatologic treatment, including hospitalization. There was no past history of skin disease. The eruption started three weeks after her marriage and quickly became generalized. There was much anxiety connected with sex and once the eruption had appeared she would indulge in orgies of scratching after intercourse. Here again it seemed at first that guilt over sexual impulses was the dominant factor but as the story unfolded it became evident that it was the relationship with the mother that supplied the guilt. She was the oldest of 3 children and when she was 15, her mother became a semi-invalid. Since the family was poor, it became necessary for her to leave school and take care of the household. She had always been her father's favorite and after his wife became ill he lavished even more affection and attention on her. The patient felt that her father had "unnatural" feelings toward her. One of the reasons for her marriage was her increasing uneasiness and her wish to get away from him. At the same time she blamed her mother for having put her in a position of a housemaid and interfering with her education. Despite the fact that her mother

would constantly incite anger by her continuous nagging and insatiable demands, the patient kept it under rigid control. "No matter how much she yelled at me, I would never answer her back because I might say something I'd regret. I'd go to my room and cry." Two weeks before her wedding she became preoccupied with the idea that if anything happened to her mother when she left home it would be her fault because she ought to be there to nurse her. On one occasion an aunt said that it would probably be hard on her mother when she left and she answered angrily, "Are you trying to tell me that I will kill my mother if I get married?" After three months of treatment she quit of her own accord, separated from her husband and returned home. During the time she was under treatment the material dealt almost solely with her guilt and anxiety about leaving her mother alone. At the same time her skin condition worsened.

In some patients the relationship of the conflict to the skin eruption begins to crystalize after the first few interviews. These patients often have some insight and welcome the idea of being treated psychotherapeutically. While the previous dermatologic investigation has focused on the search for the offending allergens, the patient has begun on his own to search his daily life for possible clues to his illness and has made some pertinent observations long before he gets to the psychiatrist. In fact, many go overboard in this direction and it becomes a problem in some cases to get the patient to follow their dermatologic regimen while under the psychiatrist's care.

Case 4. A 33-year-old married woman with a long-standing history of atopic eczema was referred to me because her present exacerbation had not responded to dermatologic care after many months of treatment. She, herself, felt that "nerves" had something to do with the skin disease and asked to see a psychiatrist. During the first interview it was obvious that she had a neurotic structure with many mild obsessive compulsive and phobic features. "In the last couple of years, when I get excited and mad, I sweat and begin to itch all over and scratch. I get moody and aggravated at little things about my husband but I keep it to myself. I stay silent but then scratch like mad for a couple of days. It (anger) seems to come out through scratching." She is very jealous of him. "Whenever he talks to a woman I burn up inside even though I know it's my fault. I think it's because I can't bear to have him pay attention to or praise any woman. I have to have all the attention. My husband reassures me and says we are perfectly matched but still I worry that he'll take off with a beautiful girl. Why should he stay with me?" The turning point in the case came when she recalled an incident on the day of her father's death. She was 12 at the time. He had been suffering from heart trouble for six months during which time she was expected to stay indoors much of the time and keep him company. Although she was very much attached to him, she also felt increasingly angry at him for keeping her away from her friends and all the games they were playing. On this particular day she wanted to join her playmates but he asked her to stay in and read to him. She refused and this usually mild-mannered man became very excited and screamed at her. She ran out of the house to find, when she returned a few hours later, that he was dead. She blamed herself for having made him angry and excited. Within a few days she developed an acute generalized eczematous eruption which never completely disappeared. There was always a more or less faint residue in the antecubital and popliteal areas. After relating this, she talked of her mother's death. She was then 15. Her mother had remarried one year previously. When she died her step-father left and she kept house for two older brothers. "After mother died I think that deep down I gloated that now I was boss of the house and everything depended on me."

After working this material through, the rash disappeared completely for the first time since the age of 12.

Case 5. A 31-year-old married woman with a history of chronic urticaria for six years was referred because the patient felt that "nerves" had something to do with her illness. At the same time the urticaria started she and her husband and baby were living with her parents. Her husband had just returned from the Army and they couldn't find an apartment. "I'm very close to my family. My father is a very nice and understanding man and though I'm closer to my mother, I go to him with my troubles. My mother runs the family and usually wants everything her own way. She has made me too dependent on her. She does all the work in the house and minds the baby. She doesn't even let me cook for my husband and I'd like that. She does everything for me so how can I hurt her by saying anything? I always agree but afterward I feel resentful. I remember once getting angry at my mother when we were visiting relatives at the seashore. She was doing all the work in the house and I got so mad, I told her she was a fool for doing it. She looked at me with such a hurt expression that I became hysterical and couldn't stop crying all day." Brief psychotherapy aided in a quick recovery.

Case 6. A 27-year-old single man with a history of atopic eczema since infancy was referred by the dermatologist at the patient's request. He thought that "aggravation" made his skin worse. He immediately launched into a tirade against his mother but he wanted me to be sure that, "I hate my mother's attitude not my mother." He had constantly struggled to break away from his mother. When he was 20 he joined a C.C.C. camp. He was very happy there but after three months his mother became depressed and he was requested to come home. Almost immediately he suffered an acute exacerbation of eczema. "I was furious at her but I couldn't stand

the locks she gave me. It's her fault that I never get anywhere. She holds me back." What he was least aware of was his dependence on her. He took jobs in outlying cities always returning home after varying periods of time on some pretext or other despite the fact that he had opportunities of making a career for himself where he was. After a few months of treatment his skin improved to the point where he felt he could work again and he bought a small trucking business. This took all the money he had and he needed all the money he collected to pay for the trucks. Despite this, his mother demanded that he contribute his share to the household expenses. This made him furious but he didn't say a word to her. When he came to the clinic the next day it was obvious that another exacerbation of eczema had started. He poured out his resentment toward his mother, that she had always been unfair and gave his brother and sister all the breaks. At the same time he felt guilty. "I feel that I'm letting her down. I feel guilty because of her but don't think my mother is a bad woman or that I think badly of her."

Case 7. A 36-year-old married woman with severe recurrent attacks of urticaria for the past four years was referred to me after she proved intransigent to the usual dermatologic therapy, including antihistiminic drugs. This woman had led a traumatic life and was constantly rejected and maltreated by her parents. "No matter how angry I got, I tried to say nothing. I was afraid to get angry because then I'd be bad and vicious and no one would love me. I keep it to myself." At the time I saw her, I was trying sodium amytal interviews in a few cases to see if I could speed up the psychotherapeutic process. Under the drug, I brought her back to the circumstances surrounding the first attack. At the time, her father was ill and her mother sent her to the druggist to get a prescription filled. When she returned her mother told her to go back for something she had forgotten. As she climbed up five long flights of stairs for the second time, she became very angry and suddenly the thought flashed through her mind, "I'd like to take something and smash their heads in." She became overwhelmed with anxiety and went right to bed. When she awakened in the morning her arms and legs were covered with urticarial wheals.

Occasionally I have been able to observe an initial outbreak of eczema while the patient was in psychotherapy for another illness.

Case 8. A 35-year-old married woman had been treated for a neurosis for six months when her first child was born. From the very first she had difficulty in her relations with the baby. She developed a number of fears focused on her health. She was certain that he would be a "mental" case like herself and tormented herself for having brought him into the world. When he was two and began to disrupt her compulsively clean and orderly house, it was more than she could bear. She would seduce him into defying her and then, under the guise of discipline, would scream at him and wallop him completely unaware of her hostility. While this defense was being analyzed, her punitive measures toward the child became more and more severe. Then one day when he was particularly provoking she grabbed him by the throat and started to choke him. "Suddenly I realized that I wanted to choke him to death. I could feel the blood rushing to my face and I let go, horrified." Two hours later her face and neck became erythematous and the next morning she had an acute eczematous eruption.

As would be expected, the constellation of skin rash and ambivalent feelings toward an infant is not uncommon. A brief example among many is as follows;

Case 9. A 32-year-old woman had severe generalized urticaria and angio-neurotic edema for seven months. Diets and antihistamine therapy brought no relief. She stated that she had been nervous ever since her baby was born 15 months ago. The idea of breast-feeding the baby had been repugnant to her but she felt it was her duty to do so. One week after she returned from the hospital she felt she was denying her husband the usual attention she had given him. She resented the baby's interference with her usual home routine. In the next breath she characterized herself as a mild person who gets along with everybody. "I never show my anger. I keep it to myself." At the time her illness started her baby had been sick for many months with chronic diarrhea keeping her up night after night. While this caused much anxiety, her hostility also increased and finally she realized that she wanted him out of the way." Only crazy people have babies. I would give him to any one."

One of the problems in the treatment of eczema is to prevent secondary trauma to the skin from scratching. Scratching contributes to lichenification and infection which prolong the illness. Here the relationship of the conflict to the chronicity of the dermatosis is most apparent. As the patient relives his emotional experiences in therapy, one can observe at first hand how the patient traumatizes his skin. For not only are guilt and anxiety over hostility of genetic importance, but also seems to serve as a trigger mechanism in pruritus. However, it is not necessary to treat patients psychotherapeutically to notice this. Many patients who had been ill for a long and had searched for an answer for the cause of their illness, made the same observation. It is not unusual for the patient to volunteer this information spontaniously in the first interview. The following are a few examples taken from patients seen just in consultation:

"When I get nervous, I itch. Like after an

argument with my sister. I rarely get mad or argue. If I do, I walk away."

"Whenever I get mad my skin itches like fury. I go off by myself or take a walk. I never show my anger."

"Whenever I get upset I don't yell back. I just itch and scratch."

"I never argue with my mother-in-law or fight with her. I just keep it in. When she was in the hospital for a week, I was calm all that week and didn't scratch."

"When I get angry I itch like mad. I go to my room and scratch until blood comes. Then I feel better."

"When I get mad I keep it to myself but I scratch like the devil. I guess I'd be better off if I exploded but I can't."

To give any more examples would be to belabor the point. I have heard the same thing over and over again with hardly a variation in literally hundreds of consultations.

Summary

That psychologic factors are of importance in the genesis and course of chronic allergic eczema and chronic urticaria is pretty much accepted by most investigators of these dermatoses. However, when it comes to the specific psychic factor or factors involved, there is hardly any agreement at all. As one reviews the literature there is scarcely a conflict experienced by man that has not in some way been implicated. Sadomasochism, exhibitionism, masturbatory guilt, sexual anxiety, repressed resentment, and many others have been delineated as a specific determinant. One reason for this is probably the fact that the more intensively a patient is studied the more one finds. The question to be answered is whether there is any specific dynamic factor or factors common to the disease process. Thus far there is no information on this point comparable to what we know, for example, about peptic ulcer or hypertension. My aim in this paper was to present some clinical material which indicates that there is a specific force involved, namely, anxiety and guilt connected with hostile aggressive impulses. Continued investigation will determine whether still more basic components are involved. Thus far it is interesting to note how an acute explosive psychic force is so intimately related to an acute explosive reaction in the skin.

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THE ACTION OF PIROMEN* ON CERTAIN NEUROPATHOLOGIC STATES

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Piromen is described by the manufacturers (Travenol Laboratories) as a sterile, nonprotein and nonanaphylactogenic bacterial component whose active factor appears to be a complex polysaccharide (4).

Certain interesting phenomena related to healing of the spinal cord, led the writer to try Piromen on various abnormalities of the nervous system.

The work of Edward G. Stuart (3), Clement, 1, 2), Windle (8, 7), Scott (5, 6, 7), and their co-workers, brought out the following pertinent observations:

1. Piromen inhibits glial scar formation and permits neuronal growth across the acutely transected spinal cord.

2. It enhances antibody formation and stimulates activity of lymphatic organs.

3. After prolonged administration extramedullary hemophoesis in liver, and spleen of rabbits and cats was noted.

4. Adrenal gland and hypophysis show a definite relation to the action of Piromen. This is shown by the alteration of granulocystosis after adrenalectomy or hypophysectomy.

5. Evidence of the action of Piromen on endocrine glands has been demonstrated histologically.

6. Electrophysiologic studies demonstrated conduction in lateral columns of spinal cord across the site of transection after treatment with Piromen.

7. The site of transection of the spinal cord must show less than 1 mm. of separation in order for healing to take place with Piromen.

8. The bacterial polysaccharide caused no regeneration in animals which were treated for less than eight days.

It seemed to me that any illness which was related to pathology of the nervous system and in which glial scar formation played a part could possibly be helped by treatment with Piromen. The following are cases in which Piromen was tried:

* Piromen was supplied by Travenol Laboratories (a subsidiary of Baxter Lab.)

Group 1: Injury to the Spinal Cord, Without Visible Damage

Case 1. J. M., male, aged 18 years. Automobile accident in April, 1951. Sustained cervical fracture at C_4 and subluxation of T_4-T_5 vertebrae. The patient had a quadriplegia after the accident. Cervical laminectomy was performed in May, 1951. There was no sign of cord compression but the surgeon was of the opinion that there were signs of a traumatic myelitis. Urinary and fecal incontinence persisted. There was some improvement in sensory level after operation and muscle action in the upper limbs was weak and restricted to slight movement of forearms and hands but no finger movements. Upper arm movements were negligible. There had been no improvement in the three months previous to institution of Piromen therapy. Sensory level, at the time of examination, June 1952, was at T_4-T_5. There was no movement in lower limbs or toes. Upper limb movements as described above. Bladder and rectal control were absent and muscle spasms in the lower limbs were frequent. Abdominal reflexes were absent.

On July 1, 1952, lumbar puncture was performed. The cerebrospinal fluid showed total protein to be 65 mg. per cent. Queckenstedt test showed a partial block. X-rays showed evidence of previous laminectomy and fracture at C_4-C_5. Treatment with Piromen was instituted, 0.5 cc. (5 gamma) daily was given intravenously for one week. Then 0.5 cc. was given subcutaneously every second day. When the first ampoule was finished, no injections were given for three weeks.

In August, the patient was re-examined. His arm movements were much stronger and sensory level had descended to about T_8.

In October, 1952, the patient showed return of reflexes in the upper abdominal quadrants. Arm raising above head was carried out quite easily. There was some sign of beginning of finger movement. Sensation in bladder and rectum was improved and there was the beginning of slight control. The sensory level was found to be at L_1.

Comment: This patient showed no signs of improvement for a number of months before treatment with Piromen was instituted. Piromen, to my mind, was and is the cause of improvement in this patient.

Case 2. F.R., a 22-year-old male, suffered paralysis of both lower limbs as a result of an automobile accident on Dec. 25, 1952. This patient had a complete flacid paralysis as a result of a fracture dislocation of the first lumbar vertebra. Sensation was present in the paralyzed limbs. Bladder and rectal con-

trol were normal. Spinal tap showed blood stained xanthochromic fluid and complete block. Laminectomy at D_{12}-L_1 revealed a compressed spinal cord. The compression was caused by the fracture dislocation and a ruptured intervertebral disc. The herniated disc was removed and the cord decompressed by laminectomy without fusion. There was no improvement in neurologic status for about two weeks, when I decided to use Piromen. The first four doses were given daily by intravenous route, 0.5 cc. of the 10 gamma strength. This dosage was continued but was given every second day subcutaneously. After about two weeks, the patient was able to turn himself in bed, could move the toes on his left foot, and healing of a decubitus ulcer in the sacral region was almost complete.

After the tenth injection of Piromen, the patient began to show movement in the toes of the right foot. Four weeks after the institution of Piromen therapy, the patient began to walk in a walker and could move his legs quite well.

Group 2: Laminectomy for Partial Compression of Spinal Cord

Case 1. R.P., male, age 47 years. Suffered from severe headaches with paresthesia in the upper right incisor teeth for many years, diagnosed as neurosis in the other clinics. Myelogram showed an obstructing lesion at C_5-C_6. Laminectomy with removal of the herniated disc was carried out. Headaches and paresthesia in teeth were completely relieved. However, the patient developed paresthesiae in both upper limbs with wasting of the flexors of the forearm and fingers, and of the deltoids, bilaterally. These signs and symptoms came on postoperatively. Vitamins B_1 and B_{12} were given in large doses by mouth and injection. Improvement was slow. Piromen was started. Five gamma (0.5 cc.) were given subcutaneously every second day for twenty injections. A two-week rest period was taken and then another twenty injections were given as previously. The patient has improved markedly in muscle power. The deltoids and flexors showed improvement in size and function and paresthesia has become greatly diminished. Improvement became evident after the first bottle of Piromen was finished.

Case 2. M. V., male, age 37 years. Previously diagnosed elsewhere, as a case of multiple sclerosis, and in another institution as a case of parkinsonism. The patient showed parkinsonian facies, left-sided weakness in both upper and lower limbs with dragging of the left foot. He showed typical loss of balance with propulsion. Two significant points were paresis of the left serratus magnus muscle and wasting of the clavicular fibers of the left deltoid muscle.

The time from onset of symptoms to laminectomy was about three and a half years. Myelography showed a suspicious obstruction to the flow of dye at C_5-C_6. Laminectomy revealed a herniated intervertebral disc at C_5-C_6 with an adhesive arachnoiditis.

For one week postoperatively there was no improvement. Piromen injections were begun. Muscle power began to return after about seven injections. Three weeks after operation, the patient was able to dance a jig and had marked neurologic improvement. Piromen was continued at home. Two months after operation, he was able to lift a 50 pound case of eggs.

About four months after operation, the patient came to my office greatly depressed and showed no further improvement over the previous visit. He never returned for further follow-up.

Case 3. A.F., female, age 57 years. Patient had gradually begun to lose power in both lower limbs. This weakness spread to the left upper limb. Bladder control was poor. Symptoms began about six months earlier. During the last two weeks, the patient's motor power had rapidly deteriorated. Myelography showed an obstruction to the flow of dye at C_5-C_6. Laminectomy revealed an adhesive arachnoiditis with arachnoidic cyst that ran from C_4 to C_7. The morning before operation, the patient had bladder incontinence and had complete loss of power in her lower limbs. During the operation the spinal cord was incised in a suspicious area but no neoplasm was found. The patient had a quadriplegia with urinary and fecal incontinence postoperatively. This lasted for four days. Piromen therapy was then instituted. After four injections, there was return of slight movement in the hands, then a day or two later in the lower limbs. Eight days after operation, the patient showed return of function which is better every day. Physiotherapy is being instituted. Three weeks postoperatively bladder function has not yet returned, but there is definite improvement of muscle power in upper and lower limbs.

Case 4. Mrs. C., Spinal Cord Tumor. Dr. L. R. Criscione was kind enough to report the following case which is under his care.

"Mrs. C. is now 57 years of age. I have treated her with a second bottle of 10 Gamma Piromen. There has been a marked improvement. Patient's original symptoms were total loss of sensation in lower limbs, constant cold legs and feet, complete inability to lift legs, and she was completely unable to walk. All these symptoms occurred immediately after the operation for a spinal cord tumor which was done on Apr. 19th, 1946. The second course of treatment with Piromen has revealed a constant and pleasant heat in Mrs. C's legs and feet. She is able to lift her legs and move them about when she is in a sitting position. She is also able to walk, but at present needs support by holding the hands of people on either side of her. Although, I do think she is able to walk alone or perhaps with canes, if it were not for a psychologic factor of having great fear of falling."

Group 3: Laminectomy in Cases Showing Multiple Sclerosis Syndrome

There were 6 cases in this series which had Piromen treatment. This treatment was instituted a few years after laminectomy in each

case. Piromen therapy was insituted in the following cases in 1952-53.

Case 1. N. H., female, age 47 years, diagnosed as multiple sclerosis. Showed typical picture. Signs and symptoms began in 1925 at about 20 years of age. She was bedridden for about three years before laminectomy. Extradural fibroma removed from C_5 and another from C_6. There was some improvement. Patient is now able to sit in a wheel chair. Piromen was given but three courses of injections had no marked beneficial effect.

Case 2. R. W., female, age 54 years. Diagnosed in 1944 as multiple sclerosis syndrome. Operation in 1947. Adhesive arachnoiditis and myelitis was found at D_5 with slight improvement postoperatively. Two courses of Piromen showed no marked improvement except for diminished spesticity in lower limbs.

Case 3. F. S., female, age 41 years. Diagnosed as multiple sclerosis in 1945. Laminectomy in 1947. Hemangioma removed from C_2-C_3. Also a dense adhesive arachnoiditis was found in this area. Patient has had four courses of Piromen with slight improvement in motor power.

Case 4. C.C.E., female, age 45 years. Began having signs and symptoms in 1942. Diagnosed as multiple sclerosis. Laminectomy in 1948, revealed an adhesive arachnoiditis at C_7-D_1. Improved in motor power postoperatively. Had many remissions. Patient is on her third course of Piromen and has improved steadily in motor power since Piromen therapy was instituted.

Case 5. R. Z., female, age 49 years. Diagnosed as multiple sclerosis syndrome. Symptoms began in 1945. Laminectomy in 1945 revealed hemangioma and adhesive arachnoiditis at C_1-C_2. There was some postoperative improvement but this was temporary. Piromen was given for three courses of injections with slight or no improvement.

Case 6. M. S., female, white, age 31 years. Diagnosed as multiple sclerosis in 1949. Laminectomy in 1951, revealed an adhesive arachnoiditis at C_1-C_2. Patient showed some postoperative improvement in motor power but this became stationary in the latter part of 1951.

Piromen therapy was instituted in November, 1952. The patient has shown encouraging results. She can now walk by holding on to the wall, whereas, formerly she was confined to her bed, or wheel chair. She has good bladder control, whereas formerly she had urinary incontinence.

Group 4: Cases Diagnosed as Multiple Sclerosis and Never Disproved

Case 1. H.L.B., white, female, age 35 years. Present syndrome began about 11 years ago with transient amblyopia. Motor power gradually diminished in all limbs. Reflexes were of spastic type. Multiple sclerosis was diagnosed on many occasions. She was confiined to bed and wheel chair for three years.

The patient complained of headaches, pain in cervical and thoracie spine. Examination showed congested discs bilaterally and there was sensory level at C_2. She had had double mastoidectomy in childhood. Because the patient refused hospitalization for diagnostic procedures, treatment with Piromen was instituted. Three courses of Piromen were given with no obvious signs of improvement. Subsequently, the patient was operated on by another surgeon.

Case 2. M. W., female, age 31 years. First diagnosed as multiple sclerosis two and a half years ago. She complained of dizziness, loss of balance, diminished motor power especially in lower limbs, transient amplyopia, and slurring speech.

Neurologic findings were compatible with a diagnosis of multiple sclerosis. Skull and cervical spine x-rays were negative.

Piromen therapy was instituted. After the first course of injections was finished, the patient had volunteered the information that she felt definitely better. She could walk more than a mile, whereas earlier she couldn't walk more than one block without resting. Her hand movements are better controlled. Vision is improved. Speech is better but still slurred. All in all, the patient has shown progressive improvement with Piromen. She has had four courses of injections.

Case 3. B.F., female, age 29 years. This patient is the sister of Case 2. The patient began to have neurologic complaints in 1946. A diagnosis of multiple sclerosis was made in another clinic. Remissions were frequent but since the summer of 1952 the patient retrogressed and remissions were less frequent and were of short duration.

Piromen therapy was instituted in July, 1952. Progress was definite. The patient could walk, talk and see better. In December 1952, the patient fell back somewhat. Piromen was given for one week by vein. The patient began to improve and has continued to do so. She has returned to work as a physical education teacher and carries out her duties efficiently when they are not too strenuous.

Case 4. B.A.F., male, physician, age 42 years. Neurologic complaints began in the Army, in New Guinea in 1943.

Signs and symptoms referable to the nervous system and compatible with a diagnosis of multiple sclerosis came on in 1945. Dicoumerol therapy was instituted in 1948. There was no improvement.

The patient was confined to a wheel chair with almost no motor power in lower limbs. Eyesight was poor. Control of fine movement of hands and fingers was poor.

Piromen therapy was instituted in May, 1952. Neurologic improvement was slow but steady and the patient was able to carry out his office practice. In December, 1952, there was a set-back which lasted one month. At the last report the patient stated that he can get down stairs while holding on to the banister with both hands.

Both the patient and his wife feel that there has been great improvement in motor power in the lower limbs. The doctor is now seeing patients in his office again.

Case 5. S.O., male physician, age 38 years. Began to have signs and symptoms of multiple sclerosis about six years ago. Deterioration was steady. Eyesight was poor, walking was unsteady and restricted to a few yards. The patient was able to carry out his office practice but lately this was becoming difficult.

Piromen therapy was instituted about six months ago. Improvement in motor power was good, so that the patient was capable of taking a trip to Europe and doing a fair amount of sight-seeing on foot. Previously this patient had an extensive course of therapy with A.C.T.H. and Cortisone with only mild temporary improvement. He is now well enough to take a position as physician with a Veterans Administration Hospital.

Case 6. J. Z., male, age 39 years. Neurologic signs and symptoms came on about nine years ago. Definite diagnosis of multiple sclerosis was made about seven years ago. The patient complained of double vision, extremely poor, slurring speech and inability to take any steps without help. He has been unable to earn his livelihood for a number of years. He is confined to a wheel chair at home.

Piromen therapy was instituted about three weeks ago. His wife called to inform me that the patient's speech was definitely improved, that double vision was less frequent and that subjectively there was a feeling of wellbeing and returning strength. Two weeks after the institution of Piromen treatment the patient called to tell me that he feels returning motor power and improvement in speech.

Summary and Conclusions

Piromen is a sterile nonprotein and nonanaphylactic bacterial component whose active factor appears to be a bacterial polysaccharide. This substance has been shown by animal experimentation to have the following pertinent characteristics:

1. It inhibits glial scar formation and permits neuronal growth across acutely transected spinal cords.

2. It enhances antibody formation and stimulates activity of lymphatic organs.

3. It has an effect on adrenal and hypophyseal glands. Evidence of the action of Piromen on endrocine glands has been demonstrated histologically.

4. Electrophysiologic studies demonstrated conduction in the lateral columns of the spinal cord across the site of transection. It was necessary to administer Piromen for at least eight days in experimental animals and it was necessary that the ends of the transected cord show less than 1 mm. of separation.

It was decided that Piromen should be given a clinical trial, based on the afore-mentioned characteristics.

The cases were abitrarily divided into four groups:

Group 1: Injury to the spinal cord without visible damage to be seen at laminectomy.

Two cases showed and are showing definite progressive response after the institution of Piromen therapy. In both cases, there was minimal improvement or no improvement before this.

Group 2: Laminectomy for partial compression of the spinal cord includes, 2 cases of herniated cervical intervertebral disc, one case of arachnoiditis with cyst formation and one case of spinal cord tumor.

Results after institution of Piromen therapy in each of 3 cases showed definite progressive improvement. Patient M. V. has not returned for further follow-up and we cannot tell about his progress.

Group 3: Laminectomy in 6 cases showing the multiple sclerosis syndrome.

Cases 4 and 6 showed signs of response to Piromen. The other 4 cases did not respond to the treatment. The 4 patients that did not respond have been bedridden or confined to a wheel chair for a prolonged period.

Group No. 4: Six cases, diagnosed as multiple sclerosis and never disproved, were started with Piromen injections. Case 1 did not respond to treatment. The other 5 cases showed definite improvement. Retrogressions were of short duration.

Piromen has given the best results if administered in doses of 5 gamma strength. The first week of Piromen can be given daily, either subcutaneously or intravenously. Then it is to be administered every second day by subcutaneous route. A two week rest is taken from injections after each 10 cc. ampoule is finished. One Vitamin B_1 25 mg. tablet and one Vitamin B_{12} 25 mg. tablet is taken three times daliy. Physiotherapy is of great help in speeding up the process of improvement.

Piromen seems to be of definite benefit in cases of multiple sclerosis that are still ambulatory. It has been of definite help after laminectomy in cases of spinal cord trauma, pressure or constriction without spinal cord disruption.

To my mind, these benefits are due to reduction of glial scar formation and stimulation of axonal healing. These processes are probably due to antigen-antibody reaction on a hormonal basis.

I have found prolonged use of Piromen to have no ill effects. On the contrary, it is my opinion, based on the foregoing cases, that Piromen should be given exhaustive clinical trial in any pathologic state involving scar formation in the nervous system.

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1882 GRAND CONCOURSE
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DENIAL OF THE LOSS OF A LIMB

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The behavior of patients following brain injuries often appears confused and irrational. However, seemingly bizarre manifestations may actually represent the injured person's attempt to maintain his integrity and develop new adaptive patterns. Such patterns may be orderly, purposeful, and, to some extent, predictable (1, 3, 5, 6, 7, 8). The following case is reported not only for its rarity but as a significant example of the relationship among physiologic, symbolic, and motivational factors in the process of reintegration following brain damage. It also illustrates some of the methods for the study of such patients.

Case Report

A 21-year-old left-handed soldier suffered a broken jaw and a traumatic amputation of his left upper extremity 6 inches below the shoulder when the automobile in which he was riding collided with a train on Feb. 22, 1953. He was unconscious for several hours following the accident. After emergency treatment, which included blood transfusion and sedation at a nearby hospital, he was transferred to Ft. Belvoir Station Hospital where he was found to be semicomatose with marked edema of the face and jaw. The deep reflexes were recorded as equal and hyperactive and pupillary reflexes were normal. The patient became increasingly restless, jumped out of bed, swore and shouted, kicked the corpsmen, and was incontinent of urine. The chart stated that he attempted to deny the loss of his arm. Because of his disturbed behavior, he was transferred to the Neuropsychiatry Service of Walter Reed Army Hospital 17 days after his accident.

In the initial examination, the patient denied that he had lost his left arm. He refused to look at the bandaged stump and suggested, "Why don't you just cut it off, Doc?" However, he expressed awareness that his jaw had been injured in a crash. He admitted having been hurt in a car accident, but said the accident had occurred four months ago. He complained that his left arm was bandaged too tightly, that it was in a sling and felt tired. He gave "being tired" as his main trouble, and on one occasion said that his penis was the part of him that had been hurt in the accident. The denial of the loss of the limb persisted until Mar. 23rd. On one occasion he admitted that the "right part" of his arm was gone, but when queried further he became angry and refused to answer, saying the question was "silly."

On the ward the patient was alternately lethargic and restless. He slept a great deal during the day and was awake at night. Routine neurologic examination was negative. The electroencephalogram record showed abnormal 1 to 3 per second activity in the right occipital region. He was disoriented for place, saying he was in "Coolidge Memorial Hospital in Georgia." It was later learned that this term was a condensation of two landmarks near the patient's home. There was a Coolidge Bridge near his home and a Cooley-Dickerson Hospital several miles down the road from the bridge. (The patient lived in New England and had been stationed in Georgia.) He gave the date correctly but did not give the date of the accident. On being asked the time of day, he usually gave the noon hour "because I'm hungry." The patient was reluctant to come to interviews, and when asked questions pertaining to his injury, the accident, or hospitalization, would become restless, ask to leave, beg to be allowed to go to sleep, or complain of being hungry. On one occasion he suggested to the examiner, "Why don't you go to bed? He misidentified the examiners as "insurance brokers." He referred to the orthopedists treating his stump as "orthopediasts" and "opediat," though he pronounced other medical terms correctly.

On Mar. 23rd, one month after his injury, the patient admitted the loss of his arm for the first time. He also appeared depressed, tearful, and agitated, and throughout the interview expressed concern about his parents' health. He still showed partial disorientation for place, saying he was in "Coolidge Memorial Hospital" which during this interview he located in Washington. In relating some of the facts of his accident he said that he was driving the car when it was struck by the train. He also said he had experienced no phantom sensations.

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During the following week he continued to be agitated and depressed and admitted that he had lost his arm. He expressed fears of going insane and wanted to see a psychiatrist. He complained about not being allowed to go out of the hospital for "ice cream" or the "movies," and of being tired. When making these complaints, he appeared less agitated. He described phantom limb sensations. At one point he said, "The arm ain't lost. Come across the street and we'll take an x-ray," but immediately after acknowledged the amputation. He remarked on another occasion, "I know it's there. I'd like to wake up and find it's a dream." His disorientation for place was expressed as "It's Walter Reed or something," "*They say* it's Coolidge Memorial," and "*They say* it's Walter Reed." He talked obsessively about his teeth, asking many times if the operation (jaw wiring) should have been done.

After Mar. 30th, the patient remained completely oriented. He appeared calmer during interviews, and described the phantom extremity as flexed at the elbow and at the fingers, with the thumb extended. He ruminated about getting a dishonorable discharge from the Army, although in reality there was no likelihood of such action. He expressed concern that the examiners might turn in an adverse report on him.

On Apr. 1, he was given 0.35 of amobarbital (amytal sodium®) intravenously. After nystagmus, errors in counting, and slight drowsiness had appeared, he was questioned and again denied that he had lost his arm. He maintained that there was nothing wrong with either arm. His answer to the question "Why are you in the hospital?" was "Because I'm supposed to be." After the nystagmus and drowsiness cleared, the patient admitted that he had been in an accident but claimed that it was his "right" arm that had been amputated. During the interview he became disoriented for place and time and misidentified the examiner. He said he was in "Walter Reed Memorial Hospital" which he located in Virginia, then North Carolina, and later at "Coolidge Memorial." He gave the date as Mar. 18, 1953, and said that he had been in an accident on Mar. 28, 1953.

The patient remained on a locked ward until Apr. 6th, but did not appear disturbed by this. He said he was "on a psychopathic ward because of concussion of the brain." He minimized the inconvenience of not being allowed out, and expressed sympathy for other patients. He stated that he remembered nothing of the accident. The last thing he recalled was stopping in the car for something to eat. He said he was unable to write because of blurred vision but did not complain of this spontaneously, nor had he mentioned it to his ward physician. The patient continued to do well on an open ward. He did not seem anxious, and expressed confidence that he would be able to carry on his old trade as a machinist despite the fact that he was left-handed. He related a dream in which he was either driving or sitting in a car which was then dragged by a train, but no one was hurt and he saw himself with his arms intact. While oriented for place, he insisted that an insurance man had told him that a friend who had also been injured in the accident had been in Coolidge Memorial Hospital.

On Apr. 14th, he was again interviewed after being given amobarbital sodium intravenously. Questioned after the administration of 0.5 Gm. of the drug, he expressed complete awareness of the loss of his arm and remained completely oriented for place. He made transitory errors in naming the month, calling it February on one occasion and March on another but corrected these when the question was repeated.

The patient was observed during the following five months. He was transferred to an orthopedic ward but expressed a preference for a closed psychiatric ward. He gave as his reason that "the beds were too hard" on the orthopedic ward. In later interviews he felt that he was being upset by the sight of other amputees. During the first three months he went out infrequently and slept a good deal during the day. He did not write letters and read little because of his "blurred vision." The amnesia for the accident persisted. Throughout his hospitalization he talked of having a feeling that there must be a Coolidge Memorial Hospital somewhere. On May 16th, he was asked to draw a person. He drew a figure in which the left upper extremity was slightly shorter than the right. He then became disturbed, threw away the paper, and proceeded to draw a person with the right side in profile. He worried a great deal about other patients, charging on one occasion that the nurses were not giving penicillin correctly.

In the fourth and fifth month following his injury, the patient became a minor disciplinary problem on the ward and on one occasion was AWOL for a short period. He was passively resistant toward routine ward chores assigned to him. He drank beer with his friends in a bar whenever he got a pass. He boasted of his attractiveness to girls, but the ward physician and charge nurse stated that the girls who visited the wards never seemed to pay much attention to him. When asked which ward he preferred, he replied that he liked the orthopedic ward better, but that the psychiatric ward had been very pleasant because "everything was free there. On this ward you have to buy everything. Over there the Red Cross people would give you free cigarettes and candy." He did not refer to the more unpleasant aspects of being on a locked ward. There was no clinical evidence of a return of disorientation for time, place or person—nor was there any denial of his disability for the remainder of the time that he was studied.

Discussion

This case illustrates the relationship between the level of brain function and the particular type of adaptation or defense with which the patient responded to the catastrophic aspects of his incapacity. As the patient recovered from the effects of his brain injury, there were alterations in the adaptation patterns at each suc-

cessively higher integration of brain function. During the first month, when the brain damage was greatest, the defenses appeared in the form of delusions and in behavior relating to sleep, food, and motor activity. These appeared symbolic of the patient's drive to preserve his integrity and deny his incapacity. Thus, the delusions included a denial that the limb was missing and the ideas that his discomfort could be explained by "the bandage being too tight" or the "roughness" of the doctors. In the second month the delusions of denial were replaced by obsessive ruminations about going insane, his teeth, the state of his parents' health, and the unfounded belief that he might receive a dishonorable discharge. This type of behavior is often seen in people without demonstrable brain disease, and is regarded as representing a defense against some greater danger. The improving conditions of brain function made it impossible for the patient to maintain an overt denial except in transitory fashion, under temporarily altered states of brain function—as in sleep—or when under the effects of amytal sodium. At the highest level of brain function, his behavior was characterized by anxiety about his condition, worry about other patients, withdrawal from people, and the use of the symbol "hard beds" to indicate his concern about being on a ward with amputees. There were, however, no delusions in a clinical sense.

In his disorientation for place, the term "Coolidge Memorial Hospital" was a symbol in which the patient expressed his wish to be in familiar surroundings near his home. As his level of brain function improved, the patterns of disorientation could not be maintained. However, even after he was oriented in the sense that he could state his whereabouts accurately, he clung to this concept of reassurance and familiarity. This was expressed by a process of displacement or projection in the idea that his *friend* had been in "Coolidge Memorial." When this belief was given up, he still had the feeling that there *must* be a hospital of that name somewhere. Thus, the same symbolic element was integrated into various patterns at changing levels of brain function with the common aim of providing a defense against stress.

The mispronunciation of the term "orthopedist" and the misnaming of the doctors appears to have more than random significance. It has been shown that in states of altered brain function objects and persons connected with the patient's problems or incapacity are characteristically misnamed (9). A process of selective perception occurs in which an object is identified in terms of some single aspect of its structure, name, or function. Thus, a doctor may be called a "lawyer," a thermometer a "nail," or a wheel chair a "spinning wheel." This verbal substitution is not an aphasic phenomenon but is usually classed as "paraphasic.' Hughlings Jackson (3) and Henry Head (2) referred to it as "imperception" to indicate the perceptual aspects that were involved. As in the case of anosognosia and disorientation just described, the persistence of paraphasia depends on the existence of an altered milieu of brain function. In our patient, when brain function had improved, he no longer used this means of expressing his feelings concerning his doctors.

Symbols relating to sleep, food, and sexual behavior appeared to have been invested with importance by the patient and used as a defense. Thus, he would respond to questions about his amputation with complaints of being hungry and sleepy. At a higher level of brain function he did not show this pattern in interviews but would manifest withdrawal by sleeping a great deal during the day. He expressed his preference for the other ward in terms of the "free cigarettes and candy." In the stage of greatest impairment of brain function he stated that the injury had been to his penis. After apparent recovery from the effects of brain damage, he used boasting of his sexual attractiveness as a means of countering feelings of inadequacy. It has been pointed out (10) that altered sexual behavior and drowsiness in patients with brain disease cannot be understood in physiologic terms only, but have symbolic aspects related to denial of illness as well.

Such changes in adaptation patterns are valuable indices of progress and prognosis in cases of severe head injuries. In this patient it provided evidence of improvement and a good prognosis. It was of interest that the change from the stage of overt denial and disorientation to that of obsessional rumination was accompanied by depression and agitation.

Paradoxically, although the brain damage was clearing, the behavior of the patient seemed more disturbed. The use of the "amytal test" (11, 12) provided further data. When interviewed under the influence of the drug shortly after he became aware of amputation, the patient denied having lost an arm and became disoriented. This reaction occurs only in patients with brain damage. When the same procedure, repeated two weeks later, failed to elicit these phenomena, the clinical impression of favorable progress was confirmed.

The phenomenon of the phantom limb following amputation of an extremity is almost universal. The sensation is usually transient and illusional and the person does not express the belief that the limb is actually still present. Occasionally, under emotional stress, an amputee may "feel" momentarily that the limb is still there. Thus, Captain Ahab in *Moby Dick* "felt" that his absent leg was with him when his wrathful thoughts turned to the white whale who had shorn him. For the delusion to exist, there apparently must be a change in brain function such as occurred in our patient through the concomitant head injury. A similar case was reported by Lhermitte (4). He observed a patient who had sustained an amputation for vascular disease of the left lower extremity and who had experienced phantom sensations. The man suffered a left hemiplegia after which he expressed the belief that the missing leg was still present. Interestingly, he also frequently responded to questions with "Laissez-moi dormir." Charcot noted that patients with phantom limbs may dream that the extremity is whole. The similarity of the mechanisms of anosognosia, disorientation, and paraphasia to those occurring in dreams has been recognized, and in sleep there is a reorganization of brain function comparable to that seen in certain types of brain injury.

Summary

The case of a patient with a brain injury and a traumatic amputation of an arm is presented. The symbolic patterns of adaptation, including denial of the loss of the limb, at changing levels of brain function through the stages of recovery are described.

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ELECTROENCEPHALOGRAPHY AND PSYCHOMETRIC TESTING IN BRAIN-DAMAGED PATIENTS

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One of the many important problems facing the physician is that of accurately diagnosing brain damage. In the past decade many new methods have become increasingly available for this purpose. The fields of electroencephalography and psychology, through research in recent years, have come to be used more extensively as aids in the diagnosis of brain damage. However, the diagnostic validity of these relatively new methods is still in question, and each will require much further investigation to establish the extent of its value.

Few studies (4) have been reported in which correlations have been made between electroencephalographic and psychologic test findings. The purpose of this paper is to present such a correlation study.

Method and Procedure

All 450 psychologic examinations given in the Colorado General Hospital during a two-year period (1950-1952) were inspected and 105 records were selected for use in this study. The records were chosen because they met the criteria of reflecting possible brain damage signs as assessed by psychologic test standards and because the subject had had an EEG. Thus signs of brain damage seen in the Rorschach, Weigl Color-Form Sorting Test, Bender Gestalt Test, and Human Drawing Test were correlated with electroencephalographic findings. It should be noted that all psychologic tests and electroencephalograms had been administered prior to the planning of this study.

The age distribution of these 105 persons is shown in Table I.

A Grass 8-channel electroencephalograph was used. So-called active lead placements were left and right frontals, motors, occipitals, anterior and posterior temporals. Reference electrodes included both ears and vertex leads. Additional leads were used in specific cases as indicated. Records were classified according to the method described by Lennox, Gibbs and Gibbs (2). Activation with hyperventilation was performed routinely. Monopolar and bipolar tracings were done in each case, and a natural sleep record was obtained whenever possible.

The criteria for assessing the possible presence of brain damage in the psychologic examinations were: organic signs considered in the Rorschach were those discussed by Piotrowski (12, 13), Harrower-Erikson (5), and Klopfer and Kelley (10); these signs were low productivity, many poorly seen responses, color-naming, repetition or perseveration, impotence, perplexity, and a restricted range of content (stereotopy).

Weigl Color-Form Sorting Test signs of brain damage were concreteness seen in an inability to perform the required sortings, an inability to explain the sortings, and extreme dependence on the examiner for aid or reassurance (1, 3).

On the Bender Gestalt, organic signs looked for were gross distortions in reproduction of design, rotation of figures, inability to reproduce angles correctly, and extreme difficulty in overlapping parts of the designs (8).

Signs regarded as suggestive of organicity in the Human Drawing tests were emphasis on the head and difficulty in drawing this portion of the body, gross distortion of body image, and minimization of contact features (11).

TABLE I

Age in Years	*Number*
0-15	37
16-30	37
31-45	22
46-60	9
TOTAL	105

* From the Division of Psychosomatic Medicine, University of Colorado Medical Center, Denver.

As was implied in the above description, no one sign or test was used as the sole criterion for the diagnosis of brain damage.

Using a combination of these four tests, a classification of *questionably organic* was given when tentative organic signs were found in one test but were not substantiated in the other tests; or when only a minimal number of signs were found in the combination of tests.

A record was classified as *organic* when there were conclusive signs of brain damage in any single test (especially the Rorschach), and/or when some signs were noted in all of the tests given.

Results

The mean Intelligence Quotient of the total 450 subjects given psychologic tests was found to be 83. The mean I.Q. of those patients whose psychometrics were suggestive of organic brain damage was 78. The difference between the mean I.Q.'s of these groups revealed the brain-damage group to be significantly lower at the .001 per cent level of confidence.

The mean I.Q. of the total tested hospital population (I.Q. 83) also was significantly lower than the mean I.Q. of 100 expected in the general population. These data will be examined further in the discussion to follow.

When the patients were divided into groups consisting of non-organic, questionable, and organic on the basis of psychometric examinations, it was found that of 52 patients with nonorganic psychologics, 67 per cent (35) had disturbed electroencephalograms. Among the 19 patients with questionable organic psychometrics, 84 per cent (17) had disturbed electroencephalograms, and of the 34 patients with organic psychologics, 94 per cent (31) revealed disturbances in the corresponding electroencephalograms.

TABLE II

Psychometric Diagnosis	*Per cent with Abnormal EEG*
Nonorganic	67
Questionable organic	84
Organic	94

The differences in these three percentages were found to be statistically significant at the .01 per cent level of confidence, and indicated that in our series, as psychologic testing revealed more obvious organicity, the chances of finding electroencephalographic disturbances in these patients also increased.

However, it should be noted, that in spite of this general correlation, 67 per cent of the patients with nonorganic psychologics revealed electroencephalographic abnormalities. Further comments will be made regarding this in the discussion below.

Attention was directed to the various types of electroencephalographic abnormalities. The records were divided into four groups as follows:

1. 18 normal records;
2. 65 diffuse disturbances, including slow and fast wave dysrythmias and paroxysmal abnormalities;
3. 6 focal records;
4. 16 mixed disturbances, i.e., records in which both focal and diffuse abnormalities were noted.

Of those patients with normal electroencephalograms, 11.12 per cent (2) were found to have psychometrics suggesting brain damage. Of those with diffuse changes, 53.85 per cent (35) had organic signs in their corresponding psychologic tests. In the focal group, 66.67 per cent (4) revealed organicity on psychologic examination; and of those with mixed disturbances (focal and diffuse) 68.75 per cent (11) were found to have organic psychometrics.

TABLE III.—Per cent of Psychometric Organicity Compared with Electroencephalographic Findings

Number	*EEG Findings*	*Per cent of Organic* Psychologics*
18	Normal	11.12
65	Diffuse	53.85
6	Focal	66.67
16	Mixed	68.75
105	TOTAL	

* (Note: In above table, percent organic psychologicals also include questionably organic tests.)

From the above data it may be seen that patients with pure diffuse disturbances in the electroencephalogram had fewer organic psychologics than did those with focal findings. It was noted that the difference between the diffuse and focal records, and also the difference

between the diffuse and mixed records were both statistically significant at the .01 per cent level of confidence.

In view of the fact that some investigators (9) have reported a high incidence of abnormal electroencephalograms in children with only functional illnesses, we divided our population into two groups by age; using 17 years as the arbitrary dividing point.

In the "under 17" group, 24 were diagnosed as nonorganic, and 17 were diagnosed as organic on the basis of psychometric examinations. Of the nonorganic patients, 79 per cent (19) were found to have disturbed electroencephalograms; and all of the organic group had disturbed electroencephalograms.

In the "over 17" group 57.1 per cent (16) of the 28 nonorganic patients had disturbed electroencephalograms, and 86.1 per cent (31) of the 36 organic patients had disturbances in their electroencephalograms.

TABLE IV.—Per cent of Abnormal Electroencephalograms in Patients

Age Groups	*Nonorganic Psychologics*	*Organic Psychologics*
Under 17	79%	100%
Over 17	57.1%	86.1%

The difference in the percentages found in patients without a psychometric diagnosis of organicity was statistically significant at the .01 per cent level of confidence.

From the above data it may be seen that the high number of abnormal electroencephalograms found in association with nonorganic psychologic examinations seems in part due to its preponderance in children.

Thus, when only the adult group is considered, roughly only half of the cases with nonorganic psychologics exhibit electroencephalographic disturbances.

Discussion

The fact that the mean intelligence quotient of all patients tested at the Colorado General Hospital was below the norm found in the general population may be explained in several ways. Many of the subjects were of Spanish-American origin and were handicapped by their lack of fluency in the English language. In addition many of the patients were representatives of the poorer economic groups and may have included subjects with lower I.Q. scores.

It should also be noted that psychologic tests are not performed routinely. Only patients who appear retarded or who are suspected of having functional disturbances or brain disease are tested. Thus, because of the above facts, the tested population was highly selective and of a type that would tend to result in a lowered mean I.Q.

The further decrease in I.Q. found in our patients diagnosed as "organic" on the basis of psychometric examinations indicates that organic brain disease tends to depress the I.Q., and this finding is in accord with those noted by other investigators (7).

It was noted above as "organicity" became more apparent on psychometric examinations, that the percentage of abnormal electroencephalograms also increased. However, it was also seen that 67 per cent of patients with nonorganic psychologics, revealed abnormal electroencephalograms. Since it is felt by some investigators (9) that many of the electroencephalographic disturbances seen in children are not due to organic brain disease, the children's group was then excluded. This lowered the figure appreciably, but still 50 per cent of the adult patients with nonorganic psychologics revealed disturbed electroencephalograms.

Several possible reasons exist for this discrepancy. One explanation is that the electroencephalogram is more sensitive than psychologic examinations in diagnosing organicity. This is certainly the case in some instances. For example, a lesion in one of the so-called "silent" areas of the brain may be recorded by the electroencephalogram, and not cause the behavioral changes to which the psychometric examination is undeniably sensitive.

Another point that should be considered is the difficulty frequently encountered when testing a patient psychologically, in differentiating organicity from some of the so-called functional states. For example, concreteness is considered to be a good sign of brain damage. However, it may also be seen in cases of anxiety, in mental defectives, and in cases of schizophrenia.

In addition, it is important to remember that when the electroencephalogram reveals a disturbance, this is by no means a sine qua non

of organic brain disease. Indeed, the EEG may often record "metabolic disturbances." Diffuse paroxysmal disturbances, for example, are most frequently *not* due to cellular pathology. Actually, paroxysms are considered to be excellent electroencephalographic signs of convulsive disorders. In these clinical states, psychologic examinations most often reveal no evidence of organicity, and in fact, are much less reliable than is the electroencephalogram in diagnosing these disorders (4).

In this connection, it is interesting that patients with diffuse EEG abnormalities had fewer organic psychologics than did those patients with focal disturbances. This is a reflection of the well known fact that focal EEG disturbances are better indicators of organic brain disease than diffuse disturbances which, according to some investigators may also be seen in various "functional" states (9).

Despite this fact, only 68 per cent of our patients with focal EEG's had psychologic tests thought to be organic. This again seems to indicate that EEG's are more reliable than psychologics in diagnosing organicity, if one accepts focal EEG disturbances as a good criterion of brain pathology.

There is little doubt that at our present state of knowledge both methods are fallible. However, the *areas* of fallibility of these two methods are undoubtedly different in many cases. A small intracranial lesion may not be recorded by the EEG, but, because of its location, may result in behavioral or personality changes which may be reflected in psychologic test results. Conversely, as was stated previously, a large focal disturbance in a "silent" area may not result in detectable personality alterations. Thus, in order to achieve more accurate diagnoses, it would seem best to use both laboratory methods together. It should be reiterated that these are only aids to complement the neurologic examination which of course remains the basic diagnostic method. Hoedemaker (6) concurs with this opinion, and states that diagnostic accuracy is exceedingly high when combinations of methods are utilized.

In conclusion, it must be stated that further studies are necessary in both fields in order to establish more definite validity for their signs of organic brain disease. However, in order to help eliminate the many sources of error, pathologic changes and processes must be correlated with EEG and psychologic test criteria.

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A BIOLOGICAL CONCEPT OF NEUROSIS ORIGIN AND PROCESS

Is It Feasible To Develop A Simplified Formulation Regarding Neurosis?*

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It is probably every scientist's wish that the material of his field could be described in such simplified form that it might be understood by all who are interested. Such an educational approach, if available, stimulates the public support as is needed at some point in the further development of one's ideas. In the many medical disciplines, each seeking to emphasize its special needs, a practice has been developed to inform the lay public of some existing disease, of its statistical extent, of the probable dangers implied, and of the available therapeutic approaches. Although they solicit support or counsel watchfulness we find no attempts made to relate the complex physiologic or pathologic details of a disease. It is obviously impossible to develop in simplified language a true and useful formulation for an audience which, even though interested, has not had at least an intensive medical education and experience.

Over the years, superficial inspection has suggested to many professional workers that the psychiatric theme of emotionalism lends itself as an exception to this reasonable rule so steadfastly applied in the other medical provinces. Accordingly there has arisen a large popular literature wherein the public is invited to become its own doctor through the use of dispensed advice, insight, exhortation, suggestive case histories, and mental hygiene; but in exchange for this supposedly benevolent counseling one is usually expected to join the benefactor in adopting the label of his particular pet psychiatric theory or so-called school of psychiatric thought. This literature presumes to inform the parent either how offsprings are "traumatized" into neuroses through adverse psychologic experiences occurring in the process of rearing, or how the "traumatized" offspring might be rehabilitated through a special process of psychologic analysis or reconditioning. The explicit suggestion in these approaches is that through reading, counseling, and belonging, or through these and similar primarily psychologic activities conducted at home by the parents, or preferably in the offices of those more experienced, there will eventuate not only improved attributes of insight to psychologic processes but also improved emotional status for personal comfort or for the emotion-maturing of offspring. Perhaps it can in part be shown here that a strong fallacy in logic exists in these wholesale, relatively literary, primarily psychologic approaches for home use or even office practice. Close inspection of all the known variables and causal relationships or sequences in personality-building should reveal that "social" conditioning and "emotion" maturing are two entirely separate phases in the parent-child or object-subject relationship complex. Counseling as to which psychologically sound "social" patterns or attitudes are either conducive to conditioning or as to which patterns are suitable, desirable, or favorable to be imbued in a subject can be done by mail or journal or perhaps better in office interviews. Every therapist, even the person with limited clinical experience, is aware that intellectual insight into psychologic details or principles, even to the so-called deepest psychologic dynamics, can be quickly acquired and readily understood. But this does not establish the so-called emotional flexibility needed to modify behavior, to invoke what was interpreted, or to stop psychic or psychosomatic symptoms. Where intellectual insight to the causes of functional malcontrol is established in a subject but without the development of true emo-

* Dedicated to Prof. A. T. Rasmussen, my beloved advisor in graduate work, whose qualities of social and scientific leadership constantly serve as inspiration in my work and other activities.

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tional flexibility, then the very distressing intrapersonal signs and symptoms of neuroticism remain essentially unchanged. At best, through constant and intense social approaches of a disciplinary or disciplining nature the interpersonal, "character," or reactive symptoms can tenuously be modified so that the neurotic energy is turned to seeking substitutive gratifications to emotion-dependency-need through so-called practical pursuits. But to obtain even small amounts of real functional or emotional flexibility with concomitant, automatic and relatively permanent reduction of all neurotic symptoms in a subject, the experienced practitioner must admit that long hours of so-called "working through" must take place wherein much rehashing of the same psychologic content occurs. What is the explanation for this? What are the physiologic mechanics? These are questions to be examined here later. For a while we recall that the pace for establishing intellectual insight, where necessary, is rapid, the pace of maturing the emotional phase at best is slow and limited in its effectiveness. Unless this distinct separation, readily witnessed clinically, of social and emotional components in personality structure is recognized, not only will the status quo and confusion continue within the psychiatric discipline, but likewise the parent for whom help is to be supplied will be traumatized by mainly groundless innuendoes or frank allegations of overt rejection and mismanagement as is often formulated by therapists.

In my articles (5, 6), using the traditional medical method, in literal, medical, and not figurative language, and by equating preclinical and clinical knowledge, I have attempted to develop a logical working hypothesis or a word description of the separate components of the personality structure. The definition for some of the terminology used here will be found in those reports. From our clinical findings on large numbers of cases as well as from the findings of many other investigators, it can now be reported with certainty that the main, basic, intrapersonal cause perpetuating functional disorder is the existence of a mild, moderate, or severe degree of emotional immaturity in the individual. It is necessary to utilize the psychotherapeutic process to resolve this pathology. The treatment, to be effective, can be administered only by those who have the capacities for applying it. This is the same as saying that through objective observation so much diabetes, cancer, or tuberculosis has been found in the populace to account for various disease syndromes and, if we wish to relieve symptoms or to cure disease, we should expand our facilities and opportunities for utilizing those medicines which have been found to be effective in the respective conditions.

But, even if available, this amount of understanding and acceptance on the part of the public regarding the theme of pathologic emotionalism is not enough. An equally urgent need is for clearer understanding and consequent agreement within the psychiatric discipline regarding the genesis of the pathologic substrate of neurosis and regarding the probable specific denominator of "psychotherapy." We are now beyond the stage of believing that neurosis or emotional deficiency is represented only by a few well defined categories of severe affliction, classically described earlier as anxiety hysteria, compulsive and phobic states, and, added more recently, a few conditions of psychosomatics. Whether considered in its popular connotation or in the strictly physiologic definition of the term, it is an error of oversimplification to continue to imply merely by the label of the condition, that the comprehensive pathologic process of neurosis is primarily emotional. Actually the disturbed emotions, or the emotional phase in the symptoms, comprise only a small part of the total complex. Instead neurosis should be considered as a process of deficient neural functioning expressing itself to various degrees in many different ways (psychically, psychosomatically, psychosocially, psychofamilially and afflicting man quite universally. Immediate and careful, comprehensively and objectively conducted research is mandatory wherein "the omnipotent scientific method" is applied.

Today, we can derive an intelligence quotient referring to the intellectual endowment potential; a physical quotient referring to the vigor and normality of the physical elements of body and brain; a social quotient referring to the type of patterns conditioned into the potentially receptive human psycho-neural elements; and perhaps even an emotional quoti-

cnt referring to the flexibility of neural functioning or how the "machine" runs. Only careful study will delineate the sources in the nervous system for each frame of reference, and the resources for modifying a frame or frames if abnormality exists.

With regard to the so-called emotional component, it remains a curious fact that some important fundaments have been left practically unformulated in the development of the premises or in the derivation of the concepts that have been applied to the origin of neurosis. It may be considered elementary, but indeed it must contain significance, if one is reminded that the dominant biologic functional characteristics of neuroid or neural substance, wherever it exists in the living state, are *irritability* and *conductivity*. These functional characteristics are not man-made any more than are those of *contractility* for muscle or *metabolism* for the liver. They obtain in the nervous system of the infant too as a latent bio-evolutionary phenomenon, exclusive of post-natal psychologic conditioning or experiences, before any postnatal psychologic events are effected.

This conduction factor is physiologically discussed in terms of its observable variations ranging from excitation to inhibition or vice versa. Numerous laboratory experiments have been conducted on the dissected but living neural tissue, which demonstrate the large, potential phasic-variations in this phenomenon. But practically no theory of neurosis includes in its calculations as a primary causative factor the probable status of the conduction mechanism in man's cortex. Do we have a scientific right to assume that it has no primary phase of relationship to the neurotic syndrome? Is there a more objective right to assume that through postnatal psychologic conditioning, through the acquired patterns, we make for greater inhibition in this innate and intrinsic conduction mechanism through speculative traumatic psychologic experiences, or, conversely, for improved conduction through optimum psychologic conditioning?

What is of greatest import, as I have attempted to convey in my previous publications, is the study of neurosis at its source in the human body. The study of differentiating the mode of control or place of action of the psychologically conditioned, socially inhibiting, or inhibitory patterns—that is, the don't", the imbued fears, the noxious experiences—from the phases of activity of intrinsic or central inhibition as it stems from the innately established conduction mechanism. This analytic need cannot be set aside by the mere insistence that no big-named concept now includes "conduction" as a premise in its logic, or by subtle and persuasive but inconclusive semantics. Instead the situation demands a clear understanding or as careful a separation as can judiciously be made of all the significant, organic and physiologic phases or variables operating in the neural complex.

Lloyd (2) of the Rockefeller Foundation for Medical Research recently supplied the following statement regarding central inhibition:

> Knowledge of the central inhibitory mechanism in contrast to conjecture, is so meager that for the most part it is only possible to consider seriatim some of the qualities of central inhibition with suitable examples. It cannot be said that there is a general theory of inhibition, the multiplicity and diversity of hypotheses, mostly discredited, forming a measure of the obscurity which has surrounded the subject. At the present time it does seem that more than one mechanism is concerned in the phenomena collectively known as central inhibition . . . Most of the views concerning the mechanisms of inhibition can neither be accepted or rejected in the present state of knowledge. Few of the many experiments that concern inhibition have a bearing on the mechanisms involved; one can only wait for future endeavor to provide the basis for a better understanding.

The most prominent contemporary neurophysiologist, Sherrington (4) says this of central inhibition:

> . . . In our rough simile of the pool, the unconscious of Freud would be itself of the surface of the pool, but a piece of surface which lay as it were by a charm restrained from entering activity, and therefore from participating in the general consciousness, a restraint which we might correlate with the inhibition which visits the nervous system far and wide . . .

It is scientifically permissible and necessary to draw correlating inferences between careful clinical observations and primary neural mechanisms even in this difficult psychiatric field with its extreme void of precise instruments. Since the neurophysiologist is quite removed from comprehensive clinical observation, such associations will probably have to stem from experienced investigators in the clinical area.

To this author a tentative hypothesis suggests itself, one which holds that the pathologic substrate of neurosis is immediately linked to the status of central inhibition in man's psychoneural cortex and, despite the unsubstantiated though persistent claims to the contrary, that this substrate has no causative correlation with *postnatal psychologic conditioning*. Ordinarily man's brain is to a most remarkable degree quantitatively superior to that of subhuman organisms. In view of this extraordinary, quantitative bio-evolutionary change and in the light of clinical evidence it is reasonable to postulate that in addition a qualifying property also had been established in the form of an excessive degree of central inhibition. Further clinical supposition suggests that this phase of central inhibition is resolved through the vehicle of the rapport-linkage or transference situation by some attribute of energy (5) which is developed and supplied by the nervous system of the object figure in the rapport. The thesis posed for this situation would compare with other phases of nature's unfinished business in man, where postnatal syntheses are required before functional maturation is established or completed, such as myelinization of the solitary tract, the development of pubescence, and the conditioning of individualizing psychologic experiences. To this observer the clinical evidence suggests this hypothesis to be essentially plausible. The innately existent qualifying functional neural immaturity is represented, so to speak, by a quantitatively excessive amount of inhibiting phase in the intrinsic conduction mechanism, and manifests itself extrinsically in the numerous signs and symptoms of neurosis, often labeled clinically, even now, as evidence of functional immaturity. It is the 'natural' incapacity of an emotionally immature parent to release or to free this excessive or "emotional" phase of central nervous system inhibition in his or her offspring that predisposes the child to neurotic behavior which displays itself in keeping with his constitutional structure and psychological experiences. In turn, the neurotic child becomes a parent and 'naturally' continues the vicious sequence of emotion depriving in his society.

The other dominant, primary neural characteristic, namely irritability, presumably correlates directly with the level of intrinsic inhibition; the neuro-irritability or "frustration" threshold being lower or more readily breached, thereby creating symptoms of neurotic dysfunction in the subjects clinically viewed as "inhibited" or with the more excessive level of intrinsic inhibition.

A relatively correct concept of neurosis-causation would be of help not only in improving currently empirical therapeutic techniques, but also would supply substantial premises for evaluating what is specific in the psychotherapeutic or emotion-maturing process. Since the group recognized as needing treatment is becoming constantly larger, now more than ever there is a need to find a way for effectively catalyzing the therapeutic process. Evidence is accumulating to indicate that a "nonverbal" factor (7, 1)is probably the specific underlying the synthesis effected by the "psychotherapeutic" situation. Man is seemingly both the victim or host of neurosis and also the host and vector (3) of the specific needed for completing this phase of nature's business.

Summary

The author has here supplied in part his ideas relative to the probable cause and probable specific in the therapeutic approaches to the disturbed emotional component in man. The foregoing should illustrate how difficult and injudicious it would be to attempt to simplify the theme of neurosis. The need for expanding clinical facilities and for scientific psychiatric research is urgent. With reference to the importance of the matter, there is no exaggeration in the following remarks: "Yet the question surely touches the reading of man's situation in his world" (4), and "Man badly needs it, not only for the immediate healing of his psychosomatic scars, but for the future of civilization" (8).

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PSYCHODYNAMIC FACTORS IN ATROPINE TOXICITY THERAPY

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A preliminary report on the use of repeated periods of atropine toxicity in the treatment of schizophrenia was published in 1950 (1). Subsequent clinical investigation confirmed our impression that the procedure could be therapeutically beneficial in mental illness (2, 3). Our previous reports on atropine toxicity therapy have emphasized the physiologic and statistical aspects to the neglect of the psychologic factors.

As our work progressed, and we grew in comprehension, we became increasingly aware of psychodynamic factors whose significance required investigation and clarification.

Although originally pharmacotoxic therapy with atropine sulfate emphasized an organic mechanism of action, we felt that such vague formulations as "autonomic discharge" and "release phenomena" were essentially noninformative and not entirely adequate as explanations for its effectiveness. Further investigations suggest that the mechanism of action is multiphasic, involving physiologic, biochemical, and particularly psychologic factors.

Atropine toxicity therapy is a procedure for the treatment of the mentally ill in which 50 to 75 times the customary dose of atropine sulfate is administered on repeated occasions. Thirty-two milligrams of atropine sulfate are injected intermuscularly two hours after breakfast. The patient is confined to bed during the acute period of toxicity, which lasts approximately six hours. Pilocarpine eyedrops (1 per cent) are administered hourly to prevent possible complication of glaucoma. More recently eserine (1 per cent) ophthalmic ointment has been substituted, being administered a single time just prior to injection of atropine. Temperatures are estimated hourly, and alcohol sponges administered in the event of undue febrile reactions. An induction period, manifested by confusion, restlessness, flushing, dry mucous membranes, and tachycardia, is followed by a comatose period during which hyperactive reflexes and occasional bursts of muscular activity and restlessness are characteristic. The recovery period, beginning four to five hours after administration of the drug, is characterized by ataxia, and gradually clearing confusion. Weight loss, during a course of therapy, is usual and due to drug-induced anorexia. Weight is regained after cessation of treatment.

Goldner (4) has described the physiologic alterations when scopolamine was used as the toxic agent. His findings are applicable to patients receiving atropine toxicity therapy, with the difference that with scopolamine febrile responses are less frequent.

We consider here only the psychodynamic factors in therapy. During our investigations 80 patients were asked the routine question, "How do you feel about treatment?" Their manifest responses were recorded verbatim, but the latent significance was not investigated. Half of this number (40) improved with treatment, and half showed no improvement. We found that four-fifths of those patients who improved with atropine toxicity therapy gave manifest responses of appreciating treatment, feeling better, of being more relaxed, of recalling forgotten experiences, and, in general, were favorably inclined to the therapeutic procedure. One-fifth of those who improved felt that treatment was a threat to life, was disagreeable, and were unfavorably impressed. In those 40 patients who did not improve with treatment, the ratios were reversed, with substantially four-fifths expressing fears of castration, death, injury, etc., and one-fifth expressing feelings that they were improving and the therapy was helping them. These data seem to confirm our clinical impression that the manifest response to this type of therapy is related to a significant degree to the objective therapeutic result.

In addition, we carried out intensive int

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Drugs supplied by Parke Davis Company.

views with a number of patients with the thought in mind of determining more detailed information of their feelings about treatment. We record below excerpts from interviews with three patients with whom no planned psychotherapy had been attempted. They were selected for this purpose because of their easy accessibility and not inconsiderable capacity for verbalization. A review of these data demonstrated factors which we felt to be of considerable significance. The first and most outstanding observation was the establishment of transference-like relationships with others. Repeatedly, the physician and ward personnel were likened to father, mother, and siblings. The second prominent element was a recognition of recall and partial re-experiencing of childhood episodes, which were seen and appreciated with a new outlook and understanding. A third factor was an acute awareness and underlying appreciation for the interest and active efforts of the therapist and ward personnel. The fourth factor, often present, but not so frequently, was the concept of treatment as a mysterious, threatening, magical procedure, administered by an "omnipotent" figure.

The first factor, that of transference-like relationships, is dynamically the most important. It suggests the possibility of establishing a psychotherapeutically valuable emotional relationship with the patient. The capacity for growth in reality testing and insight seemed indicated by frequent spontaneous statements such as "but you are not really my father." The specific content of recall of infantile experiences was seldom accessible, patients being prone to generalize that "now I remember what happened when I thought I had forgotten, and it doesn't seem so bad." A greater persistence on our part might have elicited these. Concurrent with this recall was a subjective feeling of relief of tension, possibly because associated guilt was relieved by the gratification of unconscious self-punitive wishes through the discomfort of toxicity.

The interest and attention of therapist and ward personnel seemed most influential in establishing emotional relationships which were therapeutic. The fact of treatment, administered by individuals "firm in their kindness" seemed to accelerate and perhaps even make necessary the formation of intensified interpersonal relationships. We feel that atropine toxicity therapy presents conscious as well as unconscious threats to the ego, the shattered portions of which are marshalled under the impact of its dramatic physical effects. It is apparent that this initial gain in ego reintegration can be nurtured and furthered by psychotherapy.

Therapeutic failures were probably attributable to at least two psychologic factors. The first was a weakness of ego organization, insufficiently intact to act as a mobilizing force in the re-establishment of the ego. Hebephrenics reacted to atropine toxicity therapy with apathy or mild physical complaint, and our therapy was unsuccessful with them. The second reason is undoubtedly related to the minimal quantity of psychotherapy available for these patients during our investigations. We feel confident that with intensive psychotherapy successful results would have been more frequent.

Case Reports

Case 1.—A 33 year old white female, paranoid schizophrenia; moderately improved.

". . . I feel like I am drunk. Why don't you take one yourself? . . . I call it horror of horrors . . . I associated it with something else, one person especially . . . I never had a delusion or hallucination in my life until that treatment . . . It was a cork-tipped cigarette (toxic hallucination) . . . My mother used to smoke them . . . The treatment is to make me admit things I already know, who I like and who I dislike . . . You did this to make me face it because then I wouldn't be crazy or insane . . . Dr. F. reminds me of my nephew. He is the only one I liked. I just liked him because he was blonde. The hair stands for sex . . . Mrs. DeM is just like my mother. I like her and I dislike her at the same time. I think she is kind . . . Every time I get treatment, I don't know why, there is only one thing I think of—God, when I need strength . . . I think the attendants know what they are doing and that is more than I can say for my own mother and father . . . Dr. F., you are too overanxious to prove your theory for you don't care how many we get . . . Dr. G. looked like a devil to me. I told him he thought he was the omnipotent will . . . He is something like my father . . . He didn't know any better. I was afraid of him, but I am not now . . . A power over and above the doctor's decides about treatment . . . My brother—I don't like him. Dr. G. reminded me of him in his looks, by the way he speaks; something I am getting against my will, unpleasant and against my will . . . I feel relieved when it is night time and I know I have had the treatment . . . My brother wanted sex re-

lations with me when I was nine. It was on his bed, but it goes beyond that. There was a German boy across the street. Dr. F. reminds me of him . . . It's making a difference; I see people as they really are and don't associate them with my stinking family. I either face it or else . . . I don't know how to face it . . . I am not afraid of anyone but myself—my thoughts—thoughts I have had all my life . . . This stuff we have been talking about—sex—I just didn't like the choices I had in life . . ."

Case 2.—A 38 year old white female, paranoid schizophrenia, marked temporary improvement.

". . . I call it the drug of mercy. The effect is just like a person who is always starved for water and always confused by the starvation, always looking around for that drop of water . . . It is my own personal opinion, by talking to other patients too, regardless of how confused they are it just relaxes you. You can be going in a circle, and it is just like solving your problems. It does because the things that bothered you before you look upon them as silly . . . You realize you were sick and from then on all things that bothered you you don't pay attention to. It is a merciful feeling . . . It does something to you and takes something away from you. It takes your problems away . . . When I first got sick I felt if I could sleep for a week or just have something like this hit me, I knew I would be all right . . . When I had the first treatment I knew it would help me. I no longer felt tired. I was like a screw being rusty from lack of oil. When I get that treatment it feels like the circulation wakes up the tired nerves . . . This hospital, the personnel, not the family, and the doctor but the people, the kindness of the attendants, they give this secure feeling . . . Dr. G., he is patient and helpful and kind to the patients. There is that general kindness as though he was wondering how they are coming out . . . I think you are tops. You are interested in their reactions and how they are getting along. You have always encouraged me. Mrs. DeM. is very nice. I have been here long enough to know they are interested if patients co-operate. I get along with all of them except that one attendant, H. W. . . . She frightened me . . . She used to wake me up at different times of the night and talk to me about my case, and that staring expression in her eyes. At other times she would try to feed me rich food at night. She took me out to her home . . . It was a horrible strain, and that staring look in her eyes. I didn't know what it was. She would be standing there, just staring. I would look up and see her. It really threw me. I don't think it was sex . . . I have an abnormal fear of eyes. When I go under, I stare at the white wall. I saw faces—mother, father and daughter . . . At first you feel relaxed, slowly all of a sudden it is like a stream of water going through you. Seems your circulation doesn't go right, then flushes right through you. I remember trying to pick the bugs off. I wanted to laugh. They probably thought I thought they were real . . . It helps me, it gives me strength. I am alert. It makes me feel human . . . If you have the right drug that helps you, your prospectus of personnel changes . . . by God, was I ever sick. I can't believe that I thought the food was being doped . . ."

Case 3.—28 year old colored male, paranoid schizophrenia; marked improvement.

". . . Before I got the first treatment I was afraid. I was afraid I was being treated because I needed it . . . I remember they had a sheet around my chest and I really fell out of bed . . . On the third treatment I saw a woman who was a mulatto, standing in the air. She reminds me of my mother, not my real mother but my nurse when I was a kid. It seemed like she was trying to help me. She was trying to sing like they do in church . . . The vision faded out and I knew then that it was not in my imagination but that she had really come back. I talked to the other patients. They laughed and said they had seen things too. I didn't believe them, and I asked Mr. M. He told me there had been no woman looking like my vision during treatment . . . I knew then that it was in my imagination and that the things I used to see were also in my imagination . . . The treatment put me in another world. Things were real easy and very nice. I felt at ease, and no longer worried . . . I knew that the voices were imaginary. Before that I though they had come through the air, that somebody kept talking to me, but after those treatments—and they were rough—I knew they were in me and due to my being sick . . . People were trying to care for me and help me; you especially, Dr. F. You have done the greatest thing in the world for me . . . I don't hear voices any more. I know where I stand now. I am back to the way I was . . . I relived a lot of things. I remember a lot of bad things, crazy things that I did . . . They aren't so crazy any more—the thoughts, I mean . . . It made me remember things I thought and did in the past and realized how crazy they were. It brought me back to myself. If I get sick again I would want them. They were a wonderful things. Did you discover them all by yourself? . . ."

We have recorded here the manifest responses to atropine toxicity therapy in patients who were receiving it or had recently completed a course. It may be of interest to make a statement of our clinical impression of the significance of therapy, gained from study more thorough than the verbatim material would indicate. In general, we found that treatment was looked on with varying degrees of apprehension, that its administration was tolerated as inevitable submission to circumstance, that it was accepted largely because other patients were also receiving it, and that for the most part patients recognized that it was being given in an effort to help them. The additional care and interest on the part of physician, nurses, and attendants was valuable and, indeed, may have been the most significant factor

in those who improved under the therapeutic regime. In view of the marked physiologic reaction to the administration of toxic amounts of atropine sulfate, the procedure might be regarded as a nonspecific variant of nonconvulsant coma therapy. The fact that only half of all patients so treated showed improvement argues against a physiologic mechanism being solely responsible, and our psychiatric investigations indicate the significance of psychologic factors.

Lipschutz et al. (5) concluded from their study of insulin therapy that coma was found to be essential for the production of improvement, its effectiveness being increased when combined with intensive resocialization activities. This has been the experience of many others who have interested themselves in the reason for therapeutic response with various types of mechanical, chemical, or electrical therapy. Pharmacotoxic therapy with atropine sulfate is considerably easier to administer than insulin, has proved safe in our hands, and possibly has a place in the therapeutic armamentarium. Psychotherapy and concurrent resocialization activities will undoubtedly increase its effectiveness.

Conclusions

Clinical investigations with atropine toxicity therapy indicate that psychologic factors are of great significance. These are (1) establishment of transference-like relationships with personnel; (2) recall of infantile experiences; (3) patient's awareness of the therapist's interest and active efforts to help, and (4) concept of therapy as a magical procedure. Atropine toxicity therapy may prove to be a valuable adjunct to psychotherapeutic procedures in mental illness.

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THE USE OF A STABLE SODIUM AMYTAL SOLUTION IN A GENERAL PSYCHIATRIC HOSPITAL*

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Sodium amytal has established for itself a prominent place among the pharmaceuticals used in psychiatry. Many of its indications are well known and new ones are continually being added. As effective as this drug has become in the hands of a skilled psychiatrist, a problem which has prevented him from getting the utmost efficiency from this drug has been its great instability in aqueous solution. On a busy psychiatric service the stable amytal solution which requires only to be drawn from a vial has definite advantages. The use of powdered crystalline sodium amytal, which must be dissolved immediately before use, leads in many instances to both waste and error in dosage. This preparation must be used a vial at a time so that whenever small doses are needed as for amytal interview, the waste of the drug is not inconsiderable. Much amytal is also wasted when it cannot be immediately used, and therefore, must be discarded. This is because of its uncertain potency after standing more than a few minutes.

For the past 15 months we have been using solution amytal sodium, (Amobarbital Sodium, supplied through the courtesy of the Eli Lilly Research Laboratories.) This is a preparation of 50 mg. of the barbiturate per cubic centimeter dissolved in polyethylene glycol 200, 60 per cent and sterile water. As a preservative, this solution contains also 0.25 per cent phenol. The stability of this solution has been found to be complete for periods up to 18 months at room temperature. It may be kept almost indefinitely when stored in a refrigerator. The solution is supplied in 30 cc.-sized ampules and can be injected either by intravenous or intramuscular route. This solution is colorless and flows freely even through a fine needle.

Investigation has shown that there is no alteration of the sedative and hypnotic properties or rates of absorption of the sodium amytal in this vehicle. The only difference observed between a freshly reconstituted aqueous solution and the preparation in polyethylene glycol is that the latter preparation is less irritating to the muscle tissue.

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Results

In a series of more than 120 unselected random patients receiving a total of over 350 injections, we have used this preparation in the place of usual aqueous solution with the following observations:

1. *In cases of excitement,* the solution was used repeatedly by the intramuscular route. We have found that the gluteal muscle was most satisfactory and that the material when injected caused no local irritation. In no case was more than 0.5 Gm. of the barbiturate (10 cc.) necessary for the desired sedative effect. No untoward reactions were noted.

2. *In amytal interviews,* the solution was given intravenously in the antecubital vein as rapidly as 1 cc. per second. We found the effects of this solution to be the same as with the standard preparation. In repeated use of doses running as high as 1 Gm. (20 cc.) there was no evidence of local irritation and no untoward or unusual effect. In the amytal interview situation the flexibility provided by the 30 cc. vial from which additional amounts could be withdrawn as indicated was a striking improvement over the old method requiring special assistance and interference with the procedure. An additional benefit was the fact that the solution could be injected very slowly for prolonged periods without diminution of its potency.

3. *As a preliminary to electroencephalographic, spinal, and other diagnostic procedures,* patients were given intravenous injections of this solution to make them more co-opera-

tive and to decrease their restlessness and anxiety. Approximately 0.25 Gm. (5 cc.) of the solution was given intravenously and the patients uniformly reacted well. The examinations were accomplished satisfactorily and no untoward reactions resulted. The smooth simplicity of administering this stable solution in the encephalographic laboratory resulted in a quicker, more satisfactory examination.

The 50 mg. per cubic centimeter solution, while satisfactory for intravenous use, was somewhat awkward in intramuscular use because this required a rather large injection of from 5 to 10 cc. in many cases. By splitting the 10 cc. injection into two depots, absorption was rapid and there was no objection by the patient. A newer, more concentrated preparation is currently available and should offer even greater efficiency in administering larger doses of the barbiturate.

Summary

A stable solution of sodium amytal in polyethylene glycol 200 which is efficient, effective and economical, has been described. Large doses have been used both intramuscularly and intravenously without any untoward reaction. This new vehicle produced no change in the sedative and hypnotic properties of the sodium amytal.

ABSTENTION, REBOUND, AND READJUSTMENT

Addiction Abstention, Acute Deprivation, Starvation, Shock, Withdrawal of Chronic Medication: A Study in Experimental Adaptation

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Introduction

The description and analysis of a paradoxical clinical syndrome, briefly called the abstention syndrome, requires reflection on its limitations. We are familiar with the purely laboratory approach to a medical problem: useful solutions are obtained through scientific experimentation in a laboratory set-up. By isolating parts of the problem through use of the test tube, particular casual relations and measurable facts are obtained. These can be put to use in handling clinical phenomena. Experiment and the inductive process are the tools of such investigations.

However, medicine has its own *clinical* method, making use of everyday life occurrences as one huge historical experiment. This method comprises a vast view, embracing lines of behavior and historical clinical data which are more general and not always subject to exactly measurable quantities or results. For a scientific study of pathologic behavior, the inductive laboratory method must be used in conjunction with the broader deductive method and their findings integrated. During recent years much emphasis has been placed on purely casual, inductive methods of investigation. But I want to call attention once more to the clinical descriptive method which finds a different kind of relationship between facts. Attention is directed much more toward general behavioral questions, toward disturbed equilibrium, toward the implications of habit formation. Perhaps we can throw new light on certain biologic defense mechanisms and discover their psychosomatic roots. The answers we seek can be found only if we survey clinical data from this new angle. We find in the case of the abstention syndrome a common denominator—clinical pathology caused by sudden change in external circumstances: change of diet, withdrawal of drugs, change in medication, acute deprivation, and other easily observable dysregulations. We hope that this study also proves to be a contribution to the understanding of experimental neuroses (psychoses) in which not the test tube but life itself is the great laboratory.

Since I first called attention to this clinical experiment in adaptive behavior (in 1934) Selye has approached the problem from a physiologic side, thanks to the new findings in endocrinology. He too speaks of rules of general adaptive behavior which illuminate better our clinical understanding of specific cases.

Every traumatic conditioning of the living organism, in so far as it does not endanger the organism too much, leads to a new equilibrium (also called adjustment) between the chronic traumatic condition and the organic defense. This is true in cases of chronic addiction to drugs, in changed food habits, and in continual medication in chronic cases. Disappearance of the chronic condition, withdrawal of a drug or change in medication for a chronic ailment—these also alter this equilibrium. The disturbance of the initial adjustment or of the so-called "toxic symbiosis" (Forel) is not always without danger. There are many clinical examples which show that a rapid change in food habits, or an acute cessation of intoxication (acute disintoxication), or a change of medication may evoke new symptoms which threaten the organism. When a drug addict abruptly breaks off the use of the drug, the natural consequence is a disturbance of a pharmacologic equilibrium of the organism. Abstention reactions follow.

The study of these abstention or deprivation

symptoms has a *twofold* importance. In the first place, it guides us in our clinical treatment of special psychosomatic disease, such as addiction, starvation, obesity, etc. In the second place, it increases our clinical knowledge of habit-formation, conditioning, adaptation, and adjustment.

The more modern medicine makes use of all kinds of medication for chronic cases, the more patients may be exposed to acute abstention or deprivation with all the consequent implications. Sometimes, because of war conditions, there may be no insulin or cortisone; at another time, because of intercurrent disease, the gastrointestinal tract does not absorb the medicament as, for instance, in patients with parkinsonism. These sufferers are accustomed to receiving large doses of atropine. At another time, an addict may find himself in drastic circumstances (e.g., imprisonment of a morphinist), or, in a case of obesity or of surgical emergency, the patient may be compelled to make a quick change in food habits.

In all of these instances psychosomatic disturbances may occur, and may be partially explained through change in somatic adjustment, partially as a reaction to change in mental habits. Even in cases of rather acute intoxication a quick change may bring about the same results. In general narcosis we follow the useful procedure of a gradually increasing cerebral intoxication by the narcotic. Then for hours—during the operation—an equilibrium is maintained between brain action and narcotic optimum. After the operation we stop narcosis suddenly: a rapid disintoxication takes place with diminished content of narcotic in blood and certain cerebral areas. This may lead, in a predisposed, sensitive organism, to complications such as an epileptic fit, shock, or even sudden death. The moment of regaining consciousness seems to be especially dangerous with its returning anxiety and the consequences for the heart. After prolonged narcosis with barbituric acids I have observed such symptoms ever more clearly.

Before describing such abstention symptoms some theoretical reflections should be presented. Let us take, for example, the chloroform or ether inhalation in its normal use for narcosis. It is seemingly an easily reversible process of intoxication. We observe in the patient gradually growing symptoms from light to deep narcosis depending on the degree of intoxication. If we cease the administration, the same symptoms are experienced in reversed order except that after prolonged narcosis different phenomena appear. Why has the withdrawal different results in acute and chronic intoxication?

1. After chronic intoxication and sudden cessation "the road back" to a new adjustment takes normally a much shorter time; the time factor plays a role in the process of adjustment and readjustment.

2. During chronic intoxication a physiologic adjustment combined with a different adaptation mechanism takes place, which does not disappear immediately after withdrawal.

3. Chronic intoxication often results in a pathologic metabolism, not disappearing through abstention and often more noticeable during the abstention period. The absence of intoxication makes the alterations of metabolism more manifest.

4. Chronic action of a drug may gradually change its principal site of action, as we experience with several sedatives; cortical action changes into diencephalic action.

5. Chronic intoxication may cause incurable injuries.

6. Chronic intoxication makes the sufferer more vulnerable to other exogenous noxious substances. The chronically intoxicated individual reacts in a less stable way and archaic forms of psychosomatic reactions appear more readily.

7. There may be failure of the vegetative-endocrine adaptation system (Selye).

8. Chronic intoxication prevents metabolism of valuable food constituents (as for instance vitamins in chronic alcoholism).

9. Mental complications may be present.

10. Constitutional factors and the premorbid personality also determine certain of the symptoms.

What theoretical conception do we find in the literature about the abstention syndrome? Muralt thinks that abstention frees toxic metabolic products, since the original poison no longer restricts them in their action. Marine accepts oxydi-morphone as such a product during morphium abstention. Pohlish supposes that some toxins are split into different products,

which are then excreted at different rates. It is a known fact that in case of barbital intoxication certain components remain for a longer time in the organism than others.

In man the anatomic changes resulting from barbituric acid intoxication may be found chiefly at the bases of the third and fourth ventricles and in the medulla oblongata. This coincides with experimental findings in animals, where silver-tied barbitals could be found mostly at the same locations.

It is more generally accepted that as a result of chronic intoxication, particularly when induced by those substances which cause a man to become an addict, a change takes place in the vegetative-endocrine system, the organ of adjustment and adaptation. A break in that less stable pathologic equilibrium would establish the abstention symptoms (Wuth, David, Meggendorfer, Selye). The resulting clinical symptoms consequently correspond closely to the anatomic changes which may be found in the central nervous system after chronic intoxications.

Sakel compares abstention in morphine addicts with hyperthyroidism. The drug displaces the hormone in its action on the nerve fibers. Through sudden abstention and the resulting shortage of toxin too much hormone is bound and too much antihormone is freed.

So we arrive at different theoretical conceptions about the often unexpected and paradoxical reactions during the period of abstention. We may distinguish chemical, hormonal, anatomic localizing, and psychomatic explanations. The clinical facts however, have not yet been studied enough to verify at this moment all these theories—all the more reason for industriously collecting more clinical data.

It is important to keep in mind that such an often unexpected withdrawal syndrome exists leading us to all kinds of clinical implications. Although these abstention symptoms are not specific for any one drug, but apply to all in general, the incubation period *is* rather specific. For instance, the abstention delirium in alcoholism may be experienced on the third day; in morphine addiction the fourth or fifth day is dangerous; with the barbitals we observe alarming symptoms the seventh or eighth day after withdrawal (delirium, epileptic fits); after saturnism (lead intoxication) delirium and an epileptic fit have followed two months following withdrawal (Kehrer).

The clinical symptoms of abstention become a guide to the knowledge of adjustment and adaptation of the psychosomatic organism. Before analyzing these facts we have to look at some clinical examples.

Clinical Examples

Insulin. Though insulin is not an ideal example of a method of medication with a clearly definable abstention syndrome, still it illustrates best the risks of guiding patients on high medical stilts. Too much insulin causes hypoglycemic reactions, sudden abstinence or withdrawal may cause diabetic coma. Sometimes this may occur on the basis of deterioration of the medicament or a sudden change in metabolism in the patient. It is known that accidents or intercurrent infections change the tolerance for insulin.

Insulin is used with success in the treatment of abstention symptoms (delirium tremens, morphinism); acidosis often is a concomitant symptom of abstention. The hypoglycemic reaction itself with its symptoms of fears, general unrest, and convulsions, may be compared with the general abstention symptoms in addiction. The subtle equilibrium when disturbed in either direction (hypo-and hyperglycemia) may produce the same kind of mental symptoms.

During insulin shock treatment of psychosis the patient experiences in an experimental manner the approach of "shock" after the blood sugar is gradually decreasing. He begins to perspire, archaic reflexes are apparent, the brain cortex becomes more and more excluded in the general pattern of reactions; in the end, the patient loses consciousness. This artificially evoked regression seems to have a favorable influence on some psychotic reactions.

Atropine. In the treatment of parkinsonism, especially the post-encephalic form, therapists have gathered new facts about the changing action of and tolerance to this drug. If one increases the dose carefully one can give as much as 60 mg. of atropine sulfate daily without observing disturbing symptoms and with a good therapeutic influence on the patient's rigidity, speech, and gait. However, in giving such high doses of atropine there are always

two dangers: (a) of increasing symptoms of intoxication through sudden intolerance, and (b) of sudden abstention symptoms, as has been my experience with several patients. Sometimes, because of the concomitant presence of dryness of the mouth and lack of appetite, acute gastrointestinal disturbances may arise with vomiting, and from that moment the usual peroral medication of atropine has to be stopped. As a result, the patient suffers, in addition to the original affliction, from an acute abstention syndrome: vomiting, dizziness, profuse perspiration, and acute salivation (Flinker). In one of my patients continual singultus of three days' duration resulted. Flinker believes that swift death may be the result. In giving the patient such high doses of a toxin one even has to take into account the regular timing of the medication. Because the abstention symptoms may appear so soon, one has to administer the medication intermittently, that is, every six hours over a period of 24 hours. The difficulty of this therapy with large doses of atropine is the uncertain change in absorption and tolerance of the drug because so many intercurrent gastrointestinal disturbances occur. The modern therapy of parkinsonism aims to prevent this by selecting homatropin, or novatropin, which are effective in smaller doses and have fewer gastrointestinal consequences.

Alcohol. Acute alcohol intoxication (like ether narcosis) is well known for its demoralizing after-effect. This negative phase may last a long time in oversensitive people with a low tolerance for alcohol (Meerloo). Tremors, profuse sweating, paraesthesias, and alimentary glycosuria may occur.

Better known are the more pronounced abstention symptoms in chronic alcoholism, drawing the addict into a vicious circle of abstention and drinking again. The prominent symptoms are fear, prostration, collapse. There are individual differences but we may interpret the different abstention symptoms as a slight form of delirium tremens. It is possible to arrange the different clinical pictures of alcohol abstention from a light to a heavy delirium (Jislin). Tremor, profuse sweating, and anomalies in mood are general. Then we often encounter atonia, low blood pressure, disturbance of co-ordination, speech, and hormonal action. In more severe cases we see paralysis of eye muscles, ptosis, and nystagmus. In still deeper intoxication the typical hallucinosis, delirium, and epileptic convulsions are evident. Here too, it is difficult to separate intoxication from disintoxication, because chronic alcohol intoxication also causes intercurrent metabolic disturbances (hepatitis, gastritis) influencing the intake, absorption and distribution of the drug (see Artificial Ecstasy).

In alcohol abstention especially we observe the subtle psychosomatic relationship between a desire for escape from stress and anxiety and the return in redoubled strength of what was escaped from after withdrawal. Some patients use their temporary phases of "going on the wagon" as a kind of punishment for their unconscious acting out of alternating passivity and aggression during their drinking bouts. Their physical and mental distress in abstention has gone of far that only alcohol is able to cure them and at the same time justify their unconscious orgies.

Only repeated awareness of this self-punishment-justification mechanism could help them to fully accept the "drying up." Psychotherapy is here indeed a corrective re-experience of early metabolic conditioning.

We still find differences in authoritative opinion as to whether one may consider delirium tremens as a possible result of sudden abstention. The author believes this is a possibility, especially if one take into account the latent pathologic metabolism that suddenly makes its appearance. Bonhoeffer observed several cases of delirium tremens breaking out after forced abstention in prison. The cases I observed also broke out after forced surgical hospitalization and consequent withdrawal of alcohol. Wigert observed a sudden increase in the number of delirium cases during an acute prohibition period when a general strike was in progress in Stockholm. The same thing was seen during forced prohibition in Germany. In the hospital acute delirium often breaks out two or three days after the addict has been brought in for an acute case of anxiety. The fourth night is critical for the breaking out of the delirium syndrome.

Experimentally, clearer examples are presented by some of my cases of alcohol addiction in psychoanalytic treatment. These cases submit-

ted themselves repeatedly to acute abstention and after a couple of days suffered feelings of persecution, hallucinations, and intense confusion, vascular lability, and weakness, terminating in collapse. Chills and tremors were often the most feared symptoms. Suicide may easily occur in such a situation or falling back into addiction. Happily enough, modern treatment of addicts is able to help the patient to overcome these exhausting abstention symptoms by the application of insulin, cocaine, and cortisone. Nevertheless, in some cases, even after extended psychotherapy, we have to struggle continually with returning infantile symptoms of deprivation (asthma, eczema, depressions).

Paraldehyde: *Sulfonal; Chloralhydrate.* In this group of sedatives with conspicuous cortical cerebral effects, which may be compared to the action of alcohol, abstention symptoms in addicts are repeatedly observed. In these cases one notes the appearance of typical abstention symptoms in a much clearer way, while in alcoholism they are still subject to discussion. A sudden abstention psychosis is the common rule here as I observed in paraldehydism and chloralhydrate addiction. The fourth day for the most part, after withdrawal of the drug, the patient becomes more fearful, and a full state of delirium develops, closely resembling a classic case of delirium tremens. Four days later the patient is all right again. At the end of the psychotic phase we may observe epileptic seizures. Even more marked than in alcohol abstention are peculiar disturbances of vegetative innervation, bladder cramps, intestinal contractions, tetanic spasms of the calves, abundant salivation, paresis of accommodation, yawning, sneezing. Neuralgiform pains and hallucinations may be found for short periods.

Barbituric Acid Compounds. Barbital addiction grows more and more common, especially in times of moral depression. Sleep and oblivion become the substitutes for what reality does not provide. An especial danger here is death and suicide, not only on the basis of genuine melancholia resulting from addiction, but even more as a result of sudden change in tolerance to the drug; the chronic addict suddenly goes into a coma. Especially anoxia, as a result, for instance, of intercurrent respiratory disease, decreases the tolerance for barbiturates (Meyler).

The symptoms during barbital abstention are better known to clinicians because they can be observed experimentally after prolonged treatment with barbiturates, for example, in prolonged sleep therapy in psychoses. As a result of such an experimental abstention the following symptom may be seen (Meerloo):

1. Sudden change in previous psychotic symptoms, with improvement or exacerbation of symptoms.
2. Epileptic seizures, mostly on the seventh or eighth day (10 per cent of cases).
3. Change in moods; insomnia.
4. Sudden fever or too low temperature.
5. Special psychopathologic phenomena, such as short-lasting psychoses, hallucinations, delusions, delirium.

These symptoms can be observed with the same clarity during the abstention period in barbiturate addicts. The fifth or sixth day after withdrawal acute psychotic phases of short duration may develop. Some patients are delirious, and have hallucinations and epileptic seizures. Some addicts have died in an epileptic state during their abstention (Muralt, Hewitt). Other symptoms are of interest because of their relation to the diencephalic action of barbiturates: parkinsonism, peduncular hallucinosis, amentia, tachycardia, pathologic reflexes.

Morphinism. The cure for morphinism (also addiction to heroin and other opium derivatives) is, in the first place, determined by the difficult treatment of the abstention phase. Later on extensive psychotherapy has to be undertaken. There is danger of collapse, vasovility, fear and anxiety, disgust for food, fever, painful muscular contractions, seizures, neuralgic pains, and so forth. A typical abstention delirium is often observed on the third or fourth day, sometimes accompanied by colorful hallucinations. Often this phase resembles a temporary schizophrenic psychosis with delusions of persecution, manic exaltations, and visual hallucinations. Epileptic seizures in morphine abstention are hardly ever observed.

Cocainism. Cocaine addiction is more complicated for here we often observe, during the chronic intoxication, several psychotic symp-

toms which cannot be differentiated from abstention symptoms. Frequently an acute cocaine intoxication causes a pathologic hangover, with suicidal tendencies, anxiety, and mental confusion. Much depends on the way it is taken (eaten, sniffed, injected). Sometimes the cocaine euphoria is combined with the peculiar hallucinations so well known in delirium tremens. The cocaine addict does not suffer so greatly physically on withdrawal of the drug, but the mental craving for his earlier phase of euphoria and ecstasy is much greater. However, the danger of suicide is increased by the peculiar mental cravings symbolized by the addiction. Sudden death has occurred when cocaine addicts were imprisoned and subjected to enforced abstention.

Caffein; Nicotine. Even after habitual use of mild stimulants, such as caffein or nicotine, the users show abstention symptoms and hangovers when they want to stop their habit. Part of the trouble is related to the deeper mental satisfaction involved. However, the same kind of short-lasting abstention symptoms, as seen where other drugs are concerned, can be observed. In smokers one observes depressive moods, anxiety, palpitations, diarrhea. I mention this because here we find more and more frequently that the chronic habits satisfied some unconscious needs, and the abstention provokes anxiety and feelings of deprivation. Especially during the last war we could observe how—in famine-stricken Europe—cigarettes and coffee were craved more than food.

Stransky describes a woman who was so addicted to coffee that she used raw coffee beans for years in addition to using it as a beverage. She was brought to the hospital for diarrhea and tachycardia. Here she went through an abstention phase with anxiety, apathy, and sleepiness as prominent symptoms.

Antineuralgics. Since we live in the "aspirin age" all kinds of anti-neuralgics and analgesics are swallowed like daily bread by all types of hypochondriacs. We usually do not encounter pathologic symptoms after sudden cessation of the need for such magic tablets. However, in some cases a sudden outbreak of increased neuralgic pains may occur for a few days. In clinical observation following withdrawal one often sees a reactive fever without unfavorable consequences. This is easily explained by the antipyretic action of most of these medicants. My own experience is that in patients with unstable temperature control—for instance in those with tuberculosis—this abstention fever can be observed more often and may be interpreted falsely by those not acquainted with this pharmacologic involvement. After a few days the temperature is back at its usual level.

The same apparent diagnostic failure may be made after cessation of quinine therapy in malaria.

Amphetamine. In 1937 I encountered cases of benzedrine addiction among students, in one instance with psychotic symptoms. Here, too, rebound symptoms occurred and in one case convulsions followed withdrawal.

Infectious Toxins. In infectious diseases one often observes that delirious phenomena occur after the crisis; psychiatry, in such cases, speaks of collapse delirium. Many of these aberrations may be interpreted as disintoxication delirium. In classical pneumonia, which in former days went untreated, this could be observed in one third of the cases. In plague one sees hallucinatory confusion manifested a few days after the crisis.

Corticotropine. In recent years, since we have added corticotropine and related steroids to our therapeutic arsenal, symptoms of adjustment and deprivation have to be viewed in another light. That is because cortisone itself belongs to the system of adaptors to stress (Selye). In this particular form of therapy symptoms of rebound effect after withdrawal may be observed. Rheumatic fever may recur within a week after corticotropine is withdrawn. Both overdoses and withdrawal may endanger the physiologic management of the organism (Ragan). The original disease may even return in a more virulent form after withdrawal. In the therapy one has to navigate between Scylla and Charybdis and reckon with various forms of mental disintegration (Rome and Braceland).

Important for our study is a further knowledge of how the pituitary and the adrenal cortex take part in the process of adjustment, addiction, abstention, and readjustment. In the case of indiscriminate administration of cortical hormones, an irreversible shock may de-

velop as a result of iatrogenic adrenal insufficiency (*J.A.M.A.*: Editorial, Nov. 22, 1952).

Starvation. In a publication on oral deprivation I was able to describe (with L. Klauber) a comparable group of symptoms seen in both nutritional and surgical starvation. The sudden change (or withdrawal) of food and oral satisfaction may provoke new symptoms such as depression, paroxysms, forgetfulness, inversion of sex, apathy, catalepsy, general regression, and delirium. Starvation symptoms were seen not only during actual famine, but also in cases of surgical starvation or when drastic slenderizing diets were undertaken. Since in special forms of therapy drastic changes in diet are necessitated, this mental aftermath is more often seen. In recent years, I have observed 3 cases of agitated depression after an enforced rice diet for hypertension. In one of these cases the cure was worse than the disease. The reactive psychosis and agitation killed the patient.

Analysis of the Process of Adaptation, Abstention, and Rebound

The state of abstention occurs in response to various changes in body-conditioning and its degree and form are determined by the character of these negative stimuli. The body accepts stimulus-bound conditioning more readily under certain circumstances, depending to a considerable degree on how deeply emotions are involved. This is the core of the problem of compulsive habit formation, or, in terms of animal psychology, the core of the formation of pseudo-instinctual habits, i.e., habits that acquire the force of instinct. Such conditioning with its concomitant hormonal changes and symbolic fulfillment of primary needs establishes automatisms that become part of the body economy.

In the process of adaptation to any kind of signal or stimulus we may distinguish *two* factors:

(a) A mechanical factor: There is initial automatic adaptive behavior through trial and error.

(b) A vitalistic factor: There is purposeful behavior with a search for a greater margin of safety and less expenditure of adaptive energy (vacillation). Anticipation and conditioned reflex direct the new adjustment.

Here we encounter a politary of tendencies, a hasty mechanical adaptation as opposed to a delayed aim-conscious adaptation. The human organism is in continual adaptive behavior, yet the very standards of adaptation and adjustment are constantly fluctuating.

We may compare the vacillation between ultimates of adaptation with the theory of automatic control or control by feedback as developed in physics. Wiener demonstrated that the processes of habit formation, learning, and correction of errors are partially dependent on feedback mechanisms. Through automatization of control (feedback) the resulting action will be less dependent on external interferences. For such automatic control three general conditions must be met directing the intrasystemic functioning (Justin):

(a) Self-regulation: There must be some regulatory organ, some physical means present for the change of action.

(b) Evaluation: There must be a measuring device comparable with some standard such as the thermostat regulating a desired temperature. In far too many cases norms and evaluations hamper the process of feedback and adjustment. Too many regulating and evaluating impulses lead to a breakdown.

(c) Rapidity: Measurement and regulation must be rapid enough to do the job. A thermostat with a delayed reaction would produce an oscillation between cold and warmth in the room.

In the trial and error and feedback mechanisms, special problems of expenditure of energy come into evidence. The more the adaptive behavior required for the goal becomes compulsively exact, the more energy is called for to reach that goal. This is not a simple arithmetical ratio. The exactitude of measure is proportionate to the quadrature of the original energy. This may give us some insight into how much energy is spent in compulsive adaptive perfectionism.

Too many evaluations, regulations, and inhibitions keep man in perpetual search for adjustment; no feedback mechanism can work. Tremendous energy has to be spent for man's adaptive trial and error maneuverings. Neurophysiologic findings suggest that there may be two opposite ways of adaptation, one guided

by the sympathetic, another for the parasympathetic system (Cannon).

The sympathetic system with its catabolic functions may react with a discharge of energy en masse, overshooting the mark; we speak of rage and panic as overmobilization of the adrenals.

The parasympathetic system with its anabolic functions represents a more conservative form of adaptation having more complicated adaptive and integrative mechanisms.

This excursion into the process of adaptation shows us how complicated the internal process of adaptation, automatization and renewal of adjustment are. In another study, "On Ambivalance," I hope to come back to the theoretical implications involved. For our clinical observation it is important to know that drugs, depending on what kind of regulatory system they act, may call forth many paradoxical symptoms, depending on internal acceptance or rejection of their action. This can be easily observed in dipsomaniacs. These persons can use alcohol socially without special consequences and with normal euphoria and sedative action. However, when the dypsomaniac is in depression, his adjustment changes. There is no sedative effect, a stimulative action begins with the urge to drink more and more, there is no feedback regulator and the vicious circle may culminate in a psychotic phase. If one stops such a mechanism suddenly, a new breakdown of regulations, a rebound mechanism, takes place and an abstention psychosis may develop.

Clinically both forms of breakdowns are seen.

The following group of physical and mental symptoms may be observed, all of which several investigators have tried to combine into a diencephalic syndrome, a disturbance in the central vegetative subthalamic regulation (Ratner, Lhermitte).

Diencephalic Symptoms. Disturbances in the pupil reflex and temporary paralysis of eye muscles, mimic facial paresis.

Vegetative and Sympathetic Disturbances. Vasolability, low pulse frequency, low blood pressure, migraine, collapse, angina pectoris.

Hormonal Involvements. The pituitary and adrenal hormones play a tremendous role in internal regulation.

Disturbances in Sympathetic and Parasympathetic Innervation. Muscle cramps, bladder cramps, increased salivation, yawning, sneezing, hiccup.

Peripheral Neuritis. Abstention neuralgia, neuritis, neuritis optica (especially in barbiturate addicts).

Abstention Epilepsy. The convulsive motor discharge is regarded as a physiologic mechanism. *(Krampfbereitschaft)* which can be provoked in several ways. Every abnormal brain process may promote this convulsive discharge, as we so often found in the early period of brain surgery. Discontinuance of barbital therapy may be one of these provoking agents. However, under extreme stress, anxiety, and famine the same may occur temporarily, as was observed during the Second World War. Low blood sugar is also one of the provoking factors (insulin cure epilepsy). I never saw bad results from this abstention epilepsy; it often improved the general status of the patient.

Delirium Tremens. This may occur after withdrawal of any sedative or narcotic, provided a secondary metabolic change took place previously.

A Time Factor. The incubation period for the symptoms of withdrawal varies with each patient and depends also on the drug used. The length of that period may indicate the psychosomatic reserve that has been built up. That mental defenses also play a role is proved, for instance, by addicts who take marihuana once a week. Getting away from their weekly habit nevertheless creates anxiety, tremor, unrest, depending on the degree of subjective involvement in the habit.

Korsakoff's Psychoses. These are mostly temporary episodes principally seen after a long period of alcohol addiction. However, they may appear in starvation, too.

Other mental disturbances which can be compared with the toxic psychoses—abstention delirium, color hallucinations, manic exaltations, delusions of being influenced, and so forth.

Changes in the blood cell count comparable with those in allergic reactions. The leukopenia of the first days of abstention changes into a leukocytosis with relative lymphocytosis and eosiniphilia. The disappearance of eosinophilia

is by some investigators related to the adaptation reserve (Thorn Test with A.C.T.H.).

Alkalosis. During intoxication acidosis is normally present, changing into alkalosis during abstention.

The Syndrome of Oral Deprivation. Depression, irritability, food hallucinations, forgetfulness, apathy, catalepsy, sucking movements, loss of decorum, enuresis, paranoid feelings.

Abstention and Shock. In a former publication I described mental and surgical shock as an unadjusted primitive defense mechanism serving temporarily in a period of transition by means of a new defensive and adaptive automatisms. A too severe mental trauma causes the higher mental functions (cortical functions) to disrupt the other essential defense reflexes (subcortical autonomous functions), thus disturbing normal regulation and readjustment. A fatal vicious circle is started in which the condition of the individual gradually deteriorates until a new adjustment is made. We may compare this with Von Monakow's concept of diaschizis.

In sudden starvation or deprivation of a habitual drug one finds the same vicious circle and symptoms of collapse, vasolability, apathy, and catalepsy. Even sudden death may occur. In cases of this kind Cannon's emergency reaction has led to failure.

Conclusion

Abstention, withdrawal, starvation, deprivation, or change of habits may cause acute stresses on the organism which are of importance clinically, according to the severity of the resulting symptoms. The study of pathologic adaptations may, in these circumstances, give new insight into the etiology of some forms of convulsion, delirium, hallucination, and so forth.

Theoretically, in such syndromes the paradoxical provocation of symptoms is also interesting in that it affords a view of the problems of central regulation and its psychosomatic concomitants. In all these cases we may speak of disrupted equilibrium and autonomic dysfunction (Lyons) or breakdown of automatic feedback.

Sudden trauma, sudden deprivation, sudden abstention, sudden change in circumstances, may change the relations between foreign affairs and home affairs of the body. It takes *time* before new accommodating autonomous functions can replace the original ones. What we call "shock" is the delayed transition to a new adjustment. The adrenosympathetic system determines the actual power of achievement, the tonus, the tension, the actual state of alert. The parasympathetic is the regulator of potential energy; it takes care of the anabolic transformation. Too great a quest for external energy in the service of new adjustment may be required while internal regulation is no longer or not yet adequate. A fatal, vicious circle is set in motion.

Psychologically it is important that we never be made aware by outer signs of the degree of potential adaptation we possess or of how much hidden temporary, neurotic adjustments and urge for self-defeat are latent within us. Abstention, starvation, or sudden change in circumstances may provoke the defects of hidden adjustment, the concealed signs of a lower level of adaptation. We often observe that addicts have a cumpulsive need for deprivation, a need rooted in a memory of an infantile traumatic situation and a self-destructive repetitive compulsion.

Though as yet it is hardly possible to correlate under one heading all the phenomena here cited, it can nevertheless be stated that early psychosomatic conditioning related to change in diencephalic and hormonal functions is of primary importance. Adaptation and readjustment compose a psychosomatic process correlated with the action of archaic parts of the central nervous system.

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SIMILARITY OF SOCIALIZING INTERESTS AS A FACTOR IN SELECTION AND REJECTION OF PSYCHIATRIC PATIENTS*

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The forces of attraction and repulsion which operate between individuals have been the nucleus of many social science studies since the first use of sociometric methods by J. L. Moreno (8, 9, 10). On the basis of mutual selection and rejection between individuals much has been learned about the social structure of various types of communities. In mental hospital wards, several studies employing the Morenian choice process have been made in an effort to reduce everyday stresses by improving interpersonal relationships. Factors such as age, sex, ethnic grouping, diagnostic grouping, religious affiliation, educational background, length of membership in the group, etc., have been or are being studied in order to show what relationships exist between these factors and attraction and repulsion for certain individuals (1, 2, 3, 4, 5, 6).

This study is concerned with the relationship of similarity of socializing interests of patients and personnel to selection and rejection of patients by nursing personnel. The similarity between the interests of patients and personnel is studied from two standpoints: (a) the extent to which it exists in actuality, and (b) the extent to which personnel think it exists. The main hypothesis of this study is that personnel will tend to select patients who actually share many of the personnel's interests and will tend to reject patients whose interests are largely dissimilar. This hypothesis was developed partly on the basis of clues received from nursing personnel during a previous study (11) and partly as a result of casual observations of nursing personnel over a period of years. Such observations revealed preferential attitudes of nurses toward patients on the basis of the patients' social interests and skills.

It was also felt that there would be a tendency for personnel *to think* there was greater similarity of interests between themselves and patients they selected than between themselves and patients they rejected. This is offered as a second hypothesis.

Since it is obvious that there are other factors operating in drawing people together and keeping them apart, personnel's stated reasons for their selection or rejection of patients were analyzed in an effort to glean additional insights into the bases for positive and negative choices.

Method and Procedure

The sample of personnel for this study consists of 3 graduate nurses, 6 affiliating students of nursing, and 8 attendant nurses. All 17 were interviewed following an assignment of at least two weeks to the female acute ward. The patient sample included 40 patients who were on this acute ward during this specified two-week period.

Data concerning pre-illness socializing interests were available for 30 of these 40 patients. This information was obtained by the social worker (Nancy Ogilby, of Boston Psycopathic Hospital) who interviewed patients' relatives. This approach rather than interviewing the patients themselves was used since several of the patients on the ward were unable to verbalize sufficiently. Interviews with personnel by one of the writers furnished information concerning their own socializing interests and their opinions concerning similarity of patients' interests as well as data on choices.

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Personnel were asked directly what their leisure-time activities were, what they liked to talk about with their friends, and what social skills they were interested in learning. They were asked which patients on the ward shared their social interests. Following this open-ended approach they were given a list of the 40 patients considered and asked to name those patients whose interests were similar to or different from theirs. In order to elicit choice responses the investigator posed the following question to personnel:

> You are assigned to Ward X. You are given the opportunity to do some special work with one patient. You will be relieved of some of your duties to enable you to spend more time with this patient. You are asked to list 3 patients with whom you would like to spend this time and 3 with whom you would least like to spend this time. Are there any special reasons for your selections?

Since it was anticipated that the phrase "special work with a patient might raise several questions with some of the personnel, the following explanation was decided upon: "Special work means being with the patient, attending to her needs as you see them and doing for her what you feel is helpful or necessary during the specified time."

Fifteen of the 17 personnel studied selected 6 patients each, 3 with whom they would like to spend special time and 3 with whom they preferred not to spend this time. One attendant, long employed at this hospital, refused to make either positive or negative choices, explaining that it was not right to show preference and that it was the job of the attendant "to be kind to all patients, not to just a few." An attempt at clarifying the investigator's viewpoint was unsuccessful. One other attendant was unable to make a third negative choice. As a result the total for positive choices was 48 and the total for negative choices was 47.

The known interests of 30 patients were compared to those of personnel in the following manner: (a) the number of interests shared by each patient with each of the 17 personnel was divided by the total number of interests possessed by each of these personnel in order to arrive at the percentage of interests shared by each patient with each of the personnel; (b) the sum of these 17 percentages of similarity was divided by the total number of personnel (17) in order to arrive at a mean percentage of similarity with the personnel *group* for each patient.

This mean percentage (b above) for each patient was assigned a rank on a three-point rating scale. The average percentage of interests (27.5 per cent) shared by the patient *group* with the personnel *group* determined the mid-point of the scale. Ratings were designated as follows: 3 = many interests in common (37 to 53 per cent);[1] 2 = some interests in common (17 to 36 per cent); 1 = few interests in common (0 to 16 per cent).

The relationship between the number of positive or negative choices of patients by personnel and these levels of similarity was analyzed by use of the chi-square technique. Since the chi-square value was significant at slightly less than the 0.05 level, the test of significance for differences between proportions was used to determine specifically at which similarity levels the differences between positive and negative choices were significant. Forty-six of the 48 positive and 22 of the 47 negative choices were distributed among 22 of the 30 patients whose interests were known. The remaining 8 on whom this information was available were neither selected nor rejected by personnel.

Personnel's *opinions* concerning the similarity of patients' interests were available for the entire sample of 40 patients. Another three-point scale was devised to measure the degree of similarity personnel *thought* existed between themselves and patients in terms of socializing interests. This scale was based upon the number of times each patient was mentioned by personnel. The average for all patients was established as the mid-point of the scale. Ratings on this scale were assigned as follows: 3 = much similarity (mentioned more than three times); 2 = some similarity (mentioned one to three times); 1 = little similarity (mentioned primarily as having different rather than similar interests).

Patients' ratings on both scales (actual and believed similarity) were correlated by rank differences or Rho to determine whether or not there was a relationship between the similarity of patients' interests as seen by personnel and this similarity as it actually existed.

[1] The highest percentage of similarity in this sample was found to be 53 per cent.

Reasons given by personnel for selecting and rejecting patients were of two general types: "task-oriented" and "person-oriented." Personnel were considered to have given "task-oriented" reasons when their statements concerning selection or rejection reflected a conscious effort to analyze their role in relation to what they could or could not do toward improveing the patients' condition. They were considered to have given "person-oriented" reasons when there was no evidence of this conscious role analysis and where emphasis was placed primarily on liked or disliked personality characteristics. These two categories were established following a close examination of the recorded reasons given by personnel. Because personnel were task-oriented in some instances and person-oriented in other instances and because some of the personnel gave more than one reason for some of their choices, these categories were applied to each of the reasons rather than to each of the personnel. This treatment of the data made possible a comparison between the reasons given for selection and those given for rejection. This was done by calculating the percentage of both task-oriented and person-oriented reasons given for selecting patients and the percentage of each given for rejecting patients. The differences between these percentages were tested for significance.

Results

Analysis of the data on actual similarity of socializing interests as a factor in selection and rejection revealed the following findings:

1. Among the group of patients receiving positive choices, those with more than 16 per cent of their interests in common with those of personnel received more choices (37) than those with less than 16 per cent (9). The difference between those with 17 to 36 per cent and those with 37 to 53 per cent similarity was not significant.

2. Among the group of patients receiving negative choices, those with 17 to 36 per cent similarity were the most rejected (14 negative choices) whereas those with 37 to 53 per cent and 0 to 16 per cent similarity were the least rejected (2 and 6 negative choices, respectively).

3. There was no significant difference between the number of positive and negative choices where there was less than 37 per cent similarity. However, where there was 37 per cent or more similarity there were significantly more (significant at the .001 level) positive (17) than negative choices (2).

Since the number of positive and negative choices does not vary in direct proportion to the different degrees of actual similarity, this factor cannot be used in predicting selection and rejection except in cases where patients share 37 per cent or more of the interests of personnel. (chi-square = 5.74 = $p>.10<.05$; chi-square = 4.605 = $p>.10$ and chi-square = 5.991 = $p>.05$.)

Analysis of the number of positive and negative choices as related to the *opinions* of personnel concerning similarity of interests revealed the following significant findings (chi-square = 21.31 = $p>.01$):

1. The number of positive choices increased in direct proportion to the increase in levels of similarity. Patients rated as having "little" similarity received 8 choices, those rated as having "some" similarity received 12 choices, and those rated as having "much" similarity received 28 choices.

2. Among the patients receiving negative choices, those thought to have "much" similarity of interests were least rejected (six negative choices). Those thought to have "some" similarity were most rejected (25 negative choices). An also substantially large number (16) of negative choices was received by patients thought to have "little" similarity.

3. Patients considered as having "little" and "some" similarity were more often rejected than selected, whereas patients thought to have "much" similarity were more often selected than rejected.

Opinions of personnel concerning similarity of patients' interests are a greater factor in their selection or rejection of patients than is actual similarity of interests. The greatest deviation from the expected pattern occurred at the middle rank of each scale. (In the case of opinions, this was the only deviation.) This perhaps indicates that patients having or considered as having "some" similarity arouse more conflict in personnel in terms of selection and/or rejection than do patients at the two extremes of each scale.

Eight patients who were neither selected nor rejected were considered separately. (These 8 patients may be regarded as socially isolated.) Three of the 8 actually had many interests (much similarity) in common with personnel, one had some interests (some similarity) in common and the remaining 4 actually shared few interests (little similarity) with personnel. Only 2 of the 8 (one with much similarity, the other with some similarity) gave evidence on the ward of more than one or two interests. These 2 patients were about to be transferred to the convalescent ward. Both received a high rank (3) on the similarity of opinion scales, whereas the remaining 6 were believed by personnel to share few of their interests.

A correlation (Rho) of patients' ranks on the two scales (actual versus believed similarity) was + .42. Fourteen patients received the same rank on both scales, 11 had a difference of one rank, and 5 had a difference of two ranks. A previous study (3) shows that personnel were aware of only 23.3 per cent of patients' specific skills and interests. These two findings suggest a lack of knowledge on the part of personnel in respect to patients' socializing potential.

Personnel's Stated Reasons for Selecting and Rejecting Patients

Personnel gave a total of 48 reasons for wanting to spend special time with certain patients. Of these, 31 (64 per cent) were task-oriented. The task implied in these reasons was working toward improvement in the patient's condition.

Personnel expressed various ways of approaching this task. For example, one graduate nurse selected a patient for whom she expressed dislike. She felt that both she and the patient might benefit from more concentrated contacts in the sense that both might gain insight into their strained relationship and perhaps, as a result of this, into other like relationships. Others selected patients with whom they felt they had established or could establish rapport because of personality and other factors such as age and interests they had in common with these patients. Still others selected patients whom they felt needed nurture or "mothering." For example, one student explained: "These patients need someone to rely on and it gives me a great sense of satisfaction to be that person." Another of the personnel, an attendant, said of one patient: "She is so alone—she needs someone."

The remaining 17 reasons (36 per cent) for selecting patients were person-oriented in the sense that personnel emphasized certain characteristics they liked in these patients rather than what they felt they could accomplish toward improving their condition. For example, one student of nursing selected a patient who reminded her of her sister. This student said she always liked people who reminded her of people she had known and liked previously. She was unable to identify the similarity. One of the attendants selected a patient who had a "cute personality." Another said of one of her selected patients: "She's friendly, a good worker and as far as I'm concerned, she's perfectly well (normal)." Still another said: "I like her because she appreciates the little things you do for her. She's a nice person."

While there were significantly fewer person-oriented than task-oriented reasons given for personnel's *selections,* reasons for *rejecting* patients were primarily person-oriented. Only 18 (33 per cent) were task-oriented. Some of these reasons reflected personnel's inability to establish relationships with certain patients. For example, one patient was rejected by 4 of the personnel because they felt unable to communicate with her because of her language difficulty. (One student of nursing selected this particular patient. She and the patient interacted affectively in spite of the language barrier.) Some of the personnel felt they could not relate to withdrawn patients because they could not understand them. They attributed this to their lack of education and/or experience. Other task-oriented reasons reflected the opinions of personnel concerning the needs of patients for special attention. For example, 6 patients were rejected because "they do not need attention as much as the others and can socialize pretty well on their own." Two other patients were rejected because their condition was considered hopeless. One was very retarded and the other had organic brain damage. Both were about to be transferred to other institutions.

The remaining 67 per cent of the reasons for preferring not to spend special time with certain patients were person-oriented. Here

personnel emphasized characteristics which they disliked in patients. Among these were hostility (mentioned eight times), pestiness (six times), lack of warmth (four times), unresponsiveness (four times), troublesomeness (three times), crudeness, disinterest, negativism (twice each), refusal to help self, continual chatter about the same things, lying about food intake, and flaunting a superior air (mentioned once each).

Summary and Conclusions

This study was undertaken to determine whether or not similarity of socializing interests was a factor in the selection or rejection of patients by personnel. It was hypothesized that personnel would tend to select patients who shared many of their socializing interests and would tend to reject patients whose interests were largely dissimilar. It was further hypothesized that personnel would tend to *think* there was greater similarity of interests between themselves and patients they selected than between themselves and patients they rejected. Thus, similarity of interests was studied from two standpoints: first, as it actually exists, and, second, as personnel think it exists. A correlation (rank order) was done to determine how accurately personnel could estimate similarities and differences in patients' interests. Finally, the reasons given by personnel for selecting certain patients and rejecting others were analyzed in terms of the orientation they implied. These reasons were of two types: (a) task-oriented, implying analysis by personnel of their role in relation to patients in terms of what they could or could not do toward improving the condition of these patients; and (b) person-oriented, implying selection or rejection on the basis of liked or disliked personality characteristics of patients. Differences between reasons for selecting and reasons for rejecting patients were analysed. Findings were as follows:

1. The actual similarity of patients' socializing interests to those of personnel is a factor in the selection and rejection of patients by personnel in that personnel select rather than reject patients who share many (more than 36 per cent) of their interests. In such cases it is possible to predict selection and rejection at a ratio of 8.5 to 1.

2. Personnel see patients they select as having many interests similar to theirs and patients they reject as having fewer similar interests.

3. Personnel tend to see isolates in the patient group (patients neither selected nor rejected by personnel) as having little similarity of interests. In actual fact, however, some of these patients share many of the interests of personnel.

4. Personnel are only partially aware of the existing similarities and differences in patients' interests.

5. Personnel think of patients they select primarily in terms of their role in the care of these patients whereas they think of patients they reject primarily in terms of what they dislike about these patients.

Discussion

In the mental hospital, a critical therapeutic factor is the relationship which exists between the patients and personnel. Various studies have been done which attempt to ascertain conditions associated with acceptance or rejection of patients by personnel. For example, Kandler's study on the elements of rapport (7) suggests that personnel see patients much as they do their acquaintances, i.e., they tend to like or dislike them for the same reasons. Jenkins' study of interpersonal relations in psychiatric nursing (2) shows clearly that friendly actions engender friendly reactions and vice versa.

The patient's place in his social orbit plus his ability to fit into the general expectations set by personnel for his behavior play important roles in acceptance or rejection. Clinical experience indicates that age, sex, ethnic grouping, religious background also play roles as do personality traits and their symbolic meaning in terms of the life experience of the reacting party.

In this study, an attempt has been made to relate the similarity or dissimilarity of skills and interests to rapport—the latter operationally defined as "selection" or "rejection."

It would appear that personnel as a rule select those patients whose interests and skills they sense are similar to their own and tend to reject those whose interests and skills are different. This would tend to confirm the general hypothesis that the degree of similarity of skills

and interests does play a role in rapport. The correlation also holds true to some extent when the personnel's selection of patients is based not on conception or belief concerning the patient's skills and interests, but upon actual similarity (based on reasonably objective reports from patients' relatives).

Analysis of the "reasons" given for selection and rejection suggests that those patients who are disliked are more commonly rejected, whereas those who are liked or with whom a relationship is formed which appears to personnel as therapeutically useful and manipulable are more commonly accepted. In other words, rejected patients are not liked and seen as having dissimilar social interests and pursuits. On the other hand, those patients who are liked are seen as having similar interests and pursuits.

Important for ward psychiatrists, nurses, and administrators is the fact that nursing personnel are not adequately informed of the interests and skills possessed by patients, nor do they learn enough about these skills and interests during the patients' stay on the ward. Thus, the socializing potentialities of patients are not tapped and neither are the skills and interests of personnel put to use.

This would appear to be a fundamental deficiency even in a small ward of 30 patients, with a large staff of 17 personnel, in a teaching hospital dedicated to the idea of resocialization as an important therapeutic element.

We have discussed in a previous paper how this discrepancy is related to a lack of systematic gathering of information concerning the socializing capacity of patients, defect in communication to ward leaders and personnel, and finally, to a lack of explicit training of service personnel in the art of maximum utilization of socializing resources.

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CANCER OF THE PANCREAS:

Two Cases Simulating Psychogenic Illness*

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The occurrence of mental symptoms in organic pancreatic disease is at the present but little discussed in standard works on diagnosis and psychiatry (9). Yet as long ago as 1923 Lovell (4) pointed out that "pathological anxiety as a mental symptom was associated with evidence of pancreatic disorder," and he used the term "pancreatic anxiety" to describe those cases of inflammatory disease of the pancreas whose symptoms could not be delineated from agitated melancholia. He described a case of agitated melancholia in which he made a clinical diagnosis of carcinoma of the pancreas (5). Since then at least 26 cases of verified carcinoma of the pancreas have been reported in which the symptoms of depression, anxiety, and insomnia dominated the clinical picture: 3 by Yaskin (13), one in the Case Records of the Massachusetts General Hospital (1), three by Wilbur and Latter (12), one by Dunphy (2), 5 by Pratt (7), 2 by Rickles (8), one by Kant (3), one by Pelner (6), 3 by Ulett and Parsons (11), and 5 by Savage, Butcher, and Noble (10). Ten per cent of all cases of carcinoma of the pancreas are complicated by a psychiatric problem of some importance (12, 11).

In view of these not infrequent reports in the medical, surgical, and psychiatric literature it is surprising that the appearance of anxiety, depression, insomnia, fear of impending doom, coupled with weight loss, "indigestion," and intractable pain in the back or abdomen in a previously healthy individual should fail to arouse suspicion of carcinoma of the pancreas. Yet since our last report (10) we have had the opportunity to study 2 additional cases of carcinoma of the pancreas both of which were given psychiatric diagnoses. Both were treated psychotherapeutically and both responded, albeit temporarily. So little was the diagnosis of carcinoma of the pancreas considered that the few inadequate measures of pancreatic function which we do possess were not made. It is this fact which has decided us to add two more case reports to the literature.

Case Reports

Case 1.—This patient is a 56-year-old single white male who was in good health and spirits until December 1951 at which time he developed a severe respiratory infection. He was unable to throw off this attack of grippe and suffered continued malaise, lassitude, and despondency. In addition to productive cough he began to notice burning pain on swallowing and nausea immediately after eating. About three months after the initial onset of symptoms he developed excessive thirst, drank 6 to 8 quarts of water daily, and urinated comparable amounts. He also developed dull headaches localized behind the left eye. These were more severe at bedtime; they were relieved by aspirin. He was admitted to the hospital in May 1952 complaining of upper abdominal pain, headache, leg cramps, excessive thirst, impotence, and loss of libido. Past history and review of systems were noncontributory. His weight was 156 lbs., BP 124/72, P 80. Except for decreased pulsation of the dorsalis pedis and tibialis anterior arteries his physical examination was entirely negative. He appeared well developed, well nourished, and not acutely ill. But he was depressed and cried frequently. The initial clinical impression was pituitary dysfunction due to tumor, with diabetes insipidus, diabetes mellitus, and arteriosclerosis obliterans. Laboratory studies on admission were as follows: RBC, 4,400,000; Hb, 90 per cent; WBC, 7,500; B, 4; N, 54; L, 37; E, 3; Bas, 2. Fasting blood sugar, 88 mg. per cent cholesterol, 228 mg. per cent; esters, 73 per cent; blood chlorides, 624 mg. per cent; sodium 320 mg. per cent; potassium, 18.1 mg. per cent; 17 ketosteroids, 20 mg. per cent; 24 hour urinary output, 3874 cc., specific gravity, 1,007. Circulating eosiniphils, 199.8

* The views expressed in this article are the private views of the authors and do not represent the views of the Navy Department or of the Service at large.

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—510. There were 321.8 at the beginning of the Thorn test and 333 after 25 mg. of ACTH which represented less than a 50 per cent fall in four hours. During the Addis test, the patient passed 2200 cc. of urine which he was unable to concentrate more than 1,009. The water excretion test (Powers Kepler) was "positive": Factor A 27.7. Sedimentation rate was 5 mm. at 10 minutes, 22 mm. at 30 minutes, and 28 mm. at 60 minutes. X-rays of the skull, chest, and abdomen were negative. EKG was negative. Radioactive iodine studies revealed hypofunctioning of the thyroid with 24 hour uptake of 11 per cent and 48 hour uptake of 2 per cent. The EEG was grossly abnormal: fundamental frequency ranged around 8 waves per second. There were isolated and short sequences of 140-160 millisecond waves seen in all leads, more in each parietal and occiptal derivation. There were occasional short, relatively high voltage volleys of 300-500 millisecond waves seen in all leads. The opthalmologist found normal visual fields but there were tortuosity of the retinal vessels and an increased light reflex. The right macula showed pigmentary degenerative clumps with small yellowish deposits suggestive of arteriosclerosis and diabetes mellitus.

The patient's clinical course was characterized by an ever-deepening melancholia. During the first three weeks of his hospital stay he lay in bed with his eyes closed with a pillow over his head. He was gruff, querulous, and depressed, and cried frequently. Although he was able to sleep during the day, at night he was unable to sleep and complained continually of headache, backache, and weakness. Because of the evidence of glandular insufficiency, he was given a course of ACTH 20 mg. i.m. q six hours for a period of 18 days. Within the first week there was marked improvement. He was able to sit up in bed and listen to the radio. Pitressin given 0.5 cc. q six hours over a 10 day period afforded complete relief of the polyuria. Because of the persistence of pain the patient was seen by the neurologist who found no evidence of a neurologic lesion. He described the patient as a chronically ill man who complained about the doctors' inability to find the cause of his difficulty, about the food, and about his roommate. He found that the man had a life history of strict habits and hard work, that his present emotional reaction was inappropriate, that his complaints were out of line with the endocrine findings, and on this basis he made a diagnosis of involutional melancholia. He stated that the patient was suicidal. Because of the possibilities of suicide the patient was transferred to the psychiatric service for further study of his depression. On admission to the psychiatric service he appeared a bitter, despondent, dejected, hostile, perfectionistic individual with strongly repressed dependent needs and very little insight. Mild persecutory feelings were present. Past history revealed that he had always been a suspicious, distrustful person with marked feelings of inadequacy, who usually reacted with feelings of discouragement, futility, and frustration. He complained of headache, backache, and lack of appetite. He complained about the quality of the food and of the discomforts of the room. He said that it was cruelty to make a sick man undergo such punishment (history taking) because everything was in the record. He stated that his symptoms were identical with those of a friend who died of an abdominal cancer. He felt that there was nothing he or any one else could do about the situation, that he would either die or get well. He thought he would never see his friends again. Collateral information confirmed the fact that he was always a distrustful, suspicious, lonely man, an inveterate snob and eccentric. He suffered from feelings of inferiority, was distrustful of others, and always hit first to keep the other person from hitting him. He was always unpopular because of his rudeness, his biting wit, his deliberate purposeful charm. He had been depressed since the arrival of two new top-flight men in his office because "he could see the handwriting on the wall" (i.e., that they would supersede him). During his hospital stay he remained distrustful of the psychiatric approach to his problem. He refused the shock therapy which was planned. He was nonproductive, irritable, resentful, and grumbling that nothing was done for him. He still complained of severe pain in his back. In the course of daily interviews he admitted that he had been slipping for a long time, that he tired easily, that he was scared, that he had tried to make up for it by working harder, that he had been told to take it easy and calm down. He complained that his mind was dead, that he had been living a long time on his nerves. He felt that he was a conscientious, hard-working man, that his work had been frustrating, that he had had to accept many discomforts, incompetences, and other disadvantages. After relating this he reported he felt "much better, really, than three weeks ago." While at first he had been quite vehement in asserting that everything was all right on the job, he came to the realization that "worry could have contributed to his headaches." He was persuaded to take an interest in his appearance; he got up, showered, and shaved, and entertained visitors of the opposite sex in the solarium. However, his insights did not long contribute to his symptomatic improvement. His depression progressed to apathy. He expressed little interest in anything but his back pain. He had no desire to live, refused food and vomited "intentionally." He lost 10 pounds of weight. Three weeks after his admission to the psychiatric service he became delirious. When seen by the consulting psychiatrist, the patient looked acutely ill, dehydrated, and semi-comatose. He was rubbing his hand over the upper abdomen where he seemed to have pain. There was questionable tenderness in this area. It was difficult to arouse the patient to the point of answering any questions and he showed considerable irritability. It was established, however, that he was disoriented; he said that he was on "La Liberte". The consulting psychiatrist stated that pancreatic carcinoma with involvement of the pituitary gland was a strong probability and recommended serum amylase and lipase studies. Serum amylase then obtained was 70 mg. per cent.

Blood count was Hb, 69 per cent; Rbc, 3,170,000; Wbc, 9,100. His clinical course was steadily downward with falling blood pressure, narrowing pulse pressure 70/50, increasing pulse 120-160, increasing respiration and temperature at 104°F. He became stuporous and expired in respiratory and circulatory collapse seven months after the onset of his illness and 56 days after his admission to the hospital. Autopsy revealed carcinoma of the pancreas, metastases to the retroperitoneal and hilar lymph nodes, cerebrum, cerebellum, and pituitary, acute pulmonary congestion, and moderate arteriosclerosis.

This case is unusual in that we were able to demonstrate netatases to the cerebrum, diencephalon, and pituitary. Only one other in our series of 22 pancreatic neoplasms had intracranial metases and mental symptoms were not a feature of that case.

Case 2.—A 36-year-old woman was seen in consultation because of persistent back pain. The patient had undergone an operation for removal of an extruded disc two months previously. She had suffered periodic pain for many years because of this disc but operation did not relieve the pain and a fusion operation was considered. Nocturnal pain and insomnia were marked; codeine and pantapon were being used. Because of the fear of narcotic addiction, psychiatric consultation was sought. When seen in consultation the patient was haggard, anxious, and tense. She had obviously sustained marked weight loss. She stated that she had been worried over the fact that her back pain became worse when her husband came home at night so that she felt impelled to ask him for pantapon. She complained also of pain in the leg which she related to several episodes of "slipped disc" during her life. In discussing her past history she stated that she had been greatly attached to her father who had died several months previously. Her mother who had died some years earlier had closely supervised the patient throughout her life with particular concern over her relations with men. As the youngest child the patient had always been greatly dependent upon her older sister who, she stated, visited her twice daily during her illness. The patient stated that she was discouraged by her long illness, that she had been bedridden for over three months; she complained of anorexia. Both patient and physician ascribed her weight loss to these factors. The patient was encouraged to get out of bed as the surgeons had already recommended and to attempt to reduce narcotics. She returned 10 days later for a second interview at which time she was spruced up and looked immensely better than on the first visit. She stated that she had reduced narcotics to half the previous amount, that she was now visiting friends and had indeed that day gone to the country club. She stated that the discussion with the psychiatrist of her family problems had been helpful but that she did not wish further psychiatric treatment on a regular basis. She would call the psychiatrist if she needed him. Two days later the patient was admitted by her surgeon to a general hospital with a view to a second disc operation. She became acutely ill after admission and an internist was called into consultation and believed her to be suffering from a blood dyscrasia of unknown type. The patient became steadily worse while investigation of her blood disturbance was in progress. Autopsy revealed a carcinoma of the head of the pancreas.

It was noteworthy that the psychiatric consultant despite recent studies of these syndromes overlooked the possibility of pancreatic disease; the history of chronic pain and the recent disc operation obscured the picture.

Both of these patients showed frank psychiatric symptomatology with questionable organic findings: they were both unstable personalities and their anxieties had been increased by the conditions of their illnesses and the anxiety of the doctors.

These cases are in many respects typical of cases of carcinoma of the body of the pancreas which come to the attention of the psychiatrist. Characteristically these patients are in the involutional age group. They have minimal organic findings and localizing signs. They complain of mild distress after eating; the description of the pain is vague and unconvincing. They suffer loss of appetite and occasional vomiting. They complain at times quite bitterly of an intractable pain usually referred to the back. They have severe persistent insomnia which seems to be related to their backache which does not let them rest comfortably. There is frequently a history of weight loss. They are anxious and depressed and are often beset with feelings of impending doom. Perhaps as a result of their suffering they become difficult, antagonistic patients who complain a good deal and antagonize every one else. At the same time they may respond to placebos, suggestion, and psychotherapy. This combination of antagonism, depression, response to suggestion and minimal organic findings often is sufficient to lead to their transfer to the psychiatric service where the minimal organic signs are forgotten by both psychiatrist and internist. The first case illustrates this. The provisional diagnosis of a neoplastic involvement of the pituary with secondary manifestations in the pancreas errs only in placing the primary disturbance in the pituary rather than in the pancreas. Furthermore, many of the studies while doubtful or of minimal significance tended to confirm rather than deny the original diagnosis. The EEG was grossly abnormal. The urine could never be concen-

trated more than 1,009 even during the Addis test. The polyuria was relieved by pitressin. The tests of adrenal and thyroid activity revealed hypofunction. How then does it happen that the internist does not trust his own diagnosis? It is as though once the patient is transferred to psychiatry because of his obvious depression and suicidal preoccupations, he by that very fact becomes a mental case, pure and simple. The minimal evidence of organopathy is not followed up. Instead the investigation tends to follow psychopathologic lines and enough psychopathology is often present to justify the suspicion of involutional melancholia which is quite variable in its clinical manifestations. In the case described it may be noted that while the depression was of psychotic intensity there was no delusional content. The complaint that he was dying of cancer was unfortunately, not a delusion. The alleviation of symptoms by suggestion, psychotherapy, or ACTH is not incompatible with malignant disease. Thus, if the patient improves the diagnostic error is perpetuated. This occurred in both cases described in this report.

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FURTHER EXPERIENCES WITH BLOCKING OF CUTANEOVISCERAL REFLEX ARCS FOR RELIEF OF SYMPATHETICOTONIC STATES;

(II) SOMATIC NERVE BLOCKS PERFORMED *EN PASSANT*

Final Report

P. G. SKILLERN, M.D.

The investigational basis for this thesis is to be found in the "Preliminary Report" in the May, 1947 issue of this journal and in the author's reprints. Here is the summary of that paper.

SUMMARY

(1) The noxious effects upon the internal organs that follow stimulation of the cutaneovisceral reflex arcs have been investigated from the standpoints of external cold, reflex spasm and increased sympathetic tonus at the expense of parasympathetic.

(2) Therapeutic reversal of these noxious effects is accomplished by blocking the afferent limbs of somato-sympathetic reflex arcs.

(3) The role of hypermyotonia induced by stimulation of somatic reflex arcs in the etiology of various bodily aches and pains and its therapeutic reversal have been pointed out.

(4) The technic and sites for injection have been described in detail.

(5) The therapeutic possibilities of this method have been given, either as verified or problematic.

(6) A new method has been outlined for the relief of causalgia.

In the eight years since this preliminary report number two of this summary has been repeatedly confirmed. The sites for injection (Figs. 1, 2) are now termed MCTS and MCLS respectively, or master control thoracic lumbar splanchnics. And so the remainder of this paper will be devoted to number five in a presentation of the most instructive case from each category (compare Fig. 3 to Table I).

BLOCKING OF AFFERENT LIMBS OF SOMATO-SYMPATHETIC REFLEX ARCS.

Cutaneonasal.—Widower, aged 65, treated 7 years by rhinologists for chronic suppurative sinusitis with headaches so severe that he contemplated suicide for relief. The first therapeutic block at MCTS^2 banished the headache and gave vent to yellow mucus: during 6 weekly treatments this gradually paled ultimately to leave the mucus crystal clear, while the headaches did not recur. Within 4 minutes after bilateral blocking of this arc the nasal chambers will be found wide open for better access to the sphenoid ostium.

Cutaneo-ocular.—In rhinosinusitis preceding Snellen tests often reveal blurry letters due to ciliary spasm clarified by MCTS^2 block. Ophthalmologists will find the latter helpful preceding refraction.

Cutaneosalivary.—Dry nasopharynx moistens instantly after MCTS^2.

Cutaneothyroid.—After MCTS^2 block the subnormal temperature of hypothyroidism was elevated to normal or near normal in 19 consecutive cases (Table II). These patients stated that they felt the same reaction as one hour after an exogenous dose of thyroid extract, even to blushing.

Cutaneopharyngeal.—Widow, aged 69, for over a year has felt a lump in her neck and been expectorating jelly-like material, blood-streaked. Has a dry, brassy cough with dysphonia. Tender between heads of left sternomastoid: patient reduces lump by pressing on this spot. Fluoroscope and skiagram revealed diverticulum. Alcohol block at MCTS^L. Next day patient expectorated a "string resembling a pollywog" and about a teaspoonful of inspissated pus, stringy and tough. Before injection barely able to swallow tablets: afterwards throat "roomy enough to swallow an egg." No recurrence in the elapsed quinary period.

Cutaneobronchial.—An asthmatic storekeeper

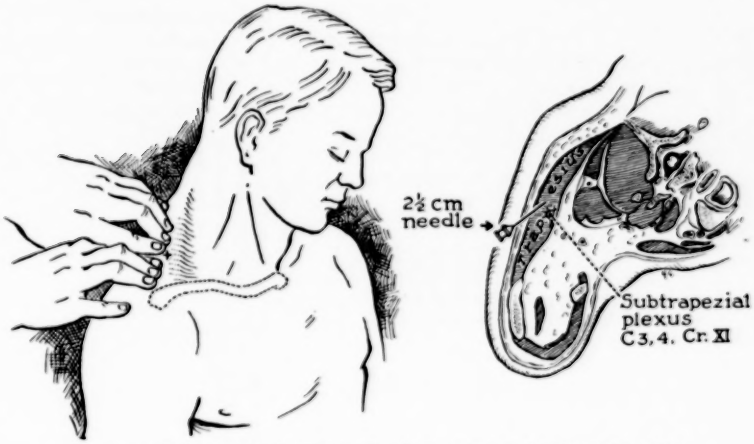

Figure 1. Author's *MCTS.* X on roll of trapezius marks site of injection.

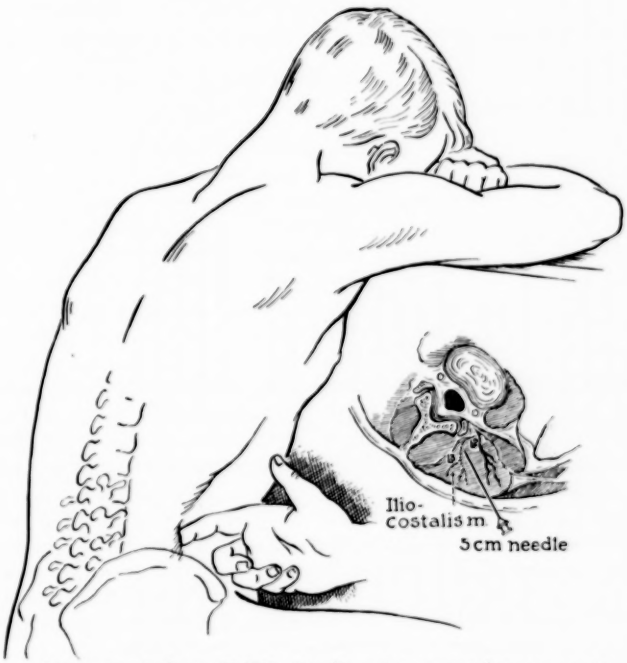

Figure 2. Author's *MCLC.* Needle point at rest between small print of L2, L3.

with cough, dyspnea and piping rales. Alcohol MCTS[2] stopped cough and facilitated deep breathing and vanishing of auscultative rales: no return in 6 years. Similar result in a 14-year old boy. Asthma of cardiac or infectious (antrum) origin does not respond, nor allergic too well.

Cutaneocardiac.—Frequently after MCTS[2] pulse slows, becomes fuller as though increased vagal activity had supplanted sympathetic dom-

TABLE I*—Analysis of Cutaneovisceral Reflex Arcs

Thoraco-Lumbar System	*Name of Arc*	*Stimulation*	*Blocking*	*Craniosacral System*	*Response Time*
		Spasm of smooth muscle. Suppression of secretions.	Checks over-stimulation of thoraco-lumbar system and unshackles craniosacral.	Released, effecting relaxation of smooth muscle and stimulation of secretions.	
I. Thoracic (upper point)	Ocular	Malaccommodation		Acuter vision	4′
	Nasal	Stuffy nose		Detumescence	4′
	Salivary	Sialoschesis		Salivant	30″
	Thyroid		Vasodilation	Secretion plus	5–20′
	Pharyngeal	Dryness; pouch		Mucus; emptying	4–x′
Cutaneo-	Laryngeal	Laryngismus		Louder voice	4′
	Bronchial	Bronchospasm		Equilibrium	4′
	Cardiac	Acceleration		Retardation	1′
	Vascular	Vasospasm		Vasodilation	4–20′
	Esophageal	Cardiospasm		Relaxation	4–10′
	Gastric	Pylorospasm		Relaxation	4–10′
	Biliary	Dyssynergia		"; bile stool	18 h
	Intestinal	Spasm with colic		"; flatus	4–20′
II. Lumbar (lower point)	Appendiceal	Spasm of appendix		"; relief of colic	4′
	Colic (sigmoid)	Spastic constipation		"; stool in 12 h.	4′
Cutaneo-	Ureteral	Spasm (obstruction?)		"; relief of colic	8′
	Vesical	Spasm; strangury		"; relief of strangury	8′
	Uterine	Spasm; dysmenorrhea		"; relief of cramps up to 1 h	1 h

*This table should be checked over against Fig. 3.

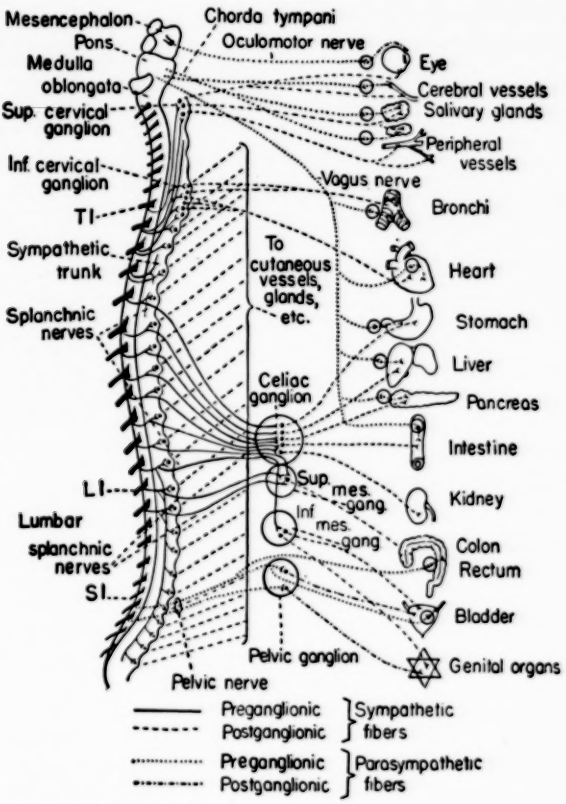

Figure 3. Distribution of autonomic nerves. (Kuntz, A., Autonomic Nervous System, 3rd ed., 1945, Lea & Febiger.)

ination. Most striking example immediate drop 76 to 40 rebounding to 68. Angina pectoris often immediately relieved, but more effectively by blocking interspinous ligaments over cardiac center of spinal cord (q. v.).

Cutaneovascular.—Effectiveness of block in essential hypertension depends on vascular elasticity and is shown by immediate vanishing of headache, dizziness, tinnitus and ultimately by subsidence of epistaxis. After MCTS^2 upper skeletal muscles relax, pulse definitely soft-pedaled. Diastolic level may lower after weekly or fortnightly sittings.

Cutaneogastric.—Matron, 26, stomach trouble since 18 despite appendectomy at 19, cholecystectomy at 25. Retarded emptying of stomach and colon constantly requiring relaxants and laxatives, respectively, and dieting. Vomits at intervals. After MCTS^2 pylorus emptied itself and stomach relaxed in 4 minutes. Next day first normal stool in many months, enjoyed regular meals. Three days later drank coffee, ate beefsteak dinner for first time in many months. Face became roseate. At end of 6 months still enjoying good health.

Cutaneocholedochal.—Woman moaning from biliary colic with sweats, chills, cold skin: nausea, constant retching. Age 55, obese, previous attacks less severe. Alcohol MCTS^2: asleep in 15 minutes; symptom-free now 8 years. Many patients thus relieved of biliary dyssynergia passed bile 24 hours later, symptom-free long periods.

Cutaneo-appendiceal.—The Preliminary Report describes a patient whose spastic appendix relaxed under direct vision (local anesthesia) after MCLS^R block. Resulting drainage removes potentiality of incipient infection: organ

TABLE II—Elevation of Subnormal Temperature in Hypothyroidism after Procaine Block

Case	*Before Block*	*After Block*	*Degrees Gained*
1	96-4/5	97-4/5	1
2	97-1/5	97-3/5	2/5
3	96-3/5	98-3/5	2
4	97-2/5	98-1/5	1/2
5	97-3/10	98-2/10	9/10
6	97;3/5	98-3/5	1
7	97-3/5	98-3/5	1
8	97-4/5	98-1/5	2/5
9	97-4/5	98-1/5	2/5
10	97	97-2/5	2/5
11	97-4/5	98-2/5	3/5
12	97-3/5	98-2/5	4/5
13	97-2/5	98-1/5	4/5
14	98-1/5	98-3/5	2/5
	(1) Right.	(2) Left.*	
15	97	97-6/10 98	1-1/10
16	96-2/5	97-2/5 98	1-3/5
17	97-2/5	97-4/5 98-1/10	3/5
18	97	98 98-1/5	1-1/5
19	97-1/5	97-3/5 97-4/5	3/5

*Injected consecutively with an interval of 10 minutes.

In Case 12 the blood pressure rose in 8 minutes from 113/80 before block to 120/80 after block. Flushing of face and feeling of increased bodily warmth were noticed from 5 to 15 minutes after injections at MCTS.

restored to normalcy. Clew to relaxation of abdominal sphincters following block.

Cutaneosigmoid.—Draughtsman, 51, for 15 years spastic constipation, tympanites: stools light, narrow, fragmented, several times a day. Three MCLS[2] blocks a week apart attained normal stools of increased diameter, darker, more cohesive, but once a day: very little gas. Like cutaneogastric patient had viscerovisceral reflex arc involvment of choledochus with dyssynergia. Bowels moving normally a year later. Both these patients discarded all drugs.

Cutaneo-uterine.—MCLS[2] blocks usually relieve pre-marital dysmenorrhea within 1 hour according to degree of hysteria.

Cutaneovesical.—Useful for relief of strangury.

Vinculitis (Sprained Ligament)

May leave lasting somatic pain and/or somato-sympathetic symptoms due to injury to

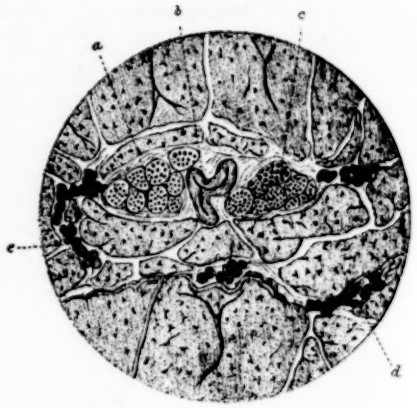

Figure 4. Transverse section of suspensory ligament of sambar deer. *a, c,* Nerves. *b,* Blood vessel. *d,* Bundles of tendinous tissue. *e,* transversely divided muscle fibers. Note almost complete regression of muscle. (Cunningham, D. J., *J. Anat. & Physiol.,* 18, 1, 1884.)

relatively huge nerves left intact after regression of muscles into ligamentous tissue (Fig. 4). The interspinous are fibrous relics of the interspinales muscles. (Bland Sutton).

Interspinous Vinculocardiac.—Elevator operator (F), 49, riding bareback age 7 thrown over horse's head upon flexed spine below root of neck. Three years later attacks of anginoid and short breath after exertion relieved by pounding upon injured site: at intervals since. Wincing tenderness over ISL T1-2, 2-3,3-4 (Fig. 5) over spinal cardiac receptive center (Fig. 6, top, med. cut. br.). Procaine infiltration checked present attack. No recurrence in 8 years.

Restaurant manager (M), 49, angina pectoris: sphygmogram normal. Sudden syncope, cold sweats: pulse small, thready. Tender over ISL T1-2,2-3: procaine injected; attack checked, pulse full, regular, 72. Gradually resumed work; no attacks up to 16 months later.

Attorney, aged 54, was suddenly seized 4 months ago with an attack of dyspnea progressing to almost complete suspension of respiration with loss of vision, relieved by morphine only. Since then attacks at irregular intervals with substernal pressure and pain down left arm to fingers. Skiagrams, electrocardiograms and other laboratory tests negative. Treated elsewhere by 2 months in bed and many car-

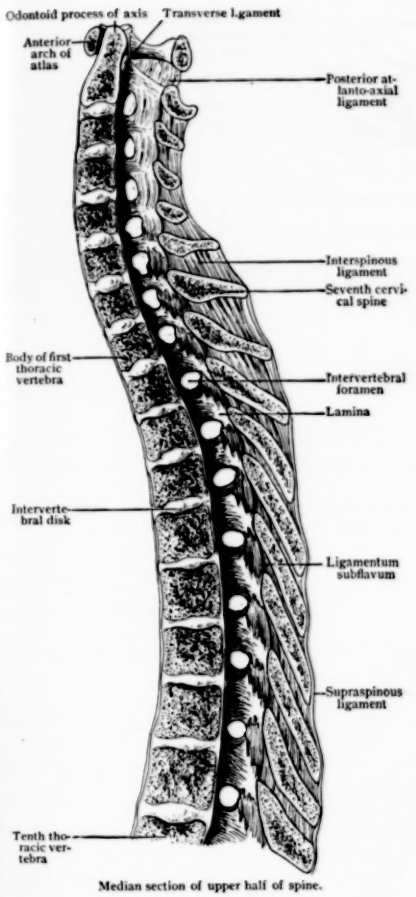

Figure 5. Interspinous ligaments. Note relative height of vertebra prominens (C7) and increasing downward slope of thoracic spines. (Piersol, G. A.: *Human Anatomy*. Philadelphia: The J. B. Lippincott Company. 1907.)

diac drugs without relief. Wincing over ISL T 3-4, 4-5. Procaine injected into ligaments. No further attack, now 1 month.

Interspinous Vinculogastric.—Matron, 30, 3-para, sudden "fluttering", distention, pylorospasm. Tender ISL T9-10: procaine; pylorus relaxed, stomach emptied, fluttering soon ceased. Needle entering ligament caused *pain radiating to solar plexus with momentary taking of breath.*

Interspinous Vinculosomatic. — Seamstress, 73, works bending forward (stretching ISL), 3 years pain in epigastrium passing directly backward through chest treated for heart disease without improvement. Tender ISL T5-6: procaine; left office free from pain; 3 years later still pain-free, discarded all drugs, resumed sewing.

Mechanic, 45, sudden lumbar pain bending under car: tender ISL L3-4; procaine; relief without recurrence.

The following comment by Gellgren complements these interspinious cases. "It will be clear from these examples that by injecting in the appropriate place such somatic structures as the interspinous ligaments with a little hypertonic saline it is possible to reproduce pain having the segmental distribution characteristic of visceral disease, simultaneously with the superficial and deep tenderness, and the muscular rigidity, which frequently accompanies such pain (the viscero-sensory and viscero-motor reflexes of Mackenzie)."

Vinculitis, Sacroiliac.—Engineer, 53, limped in with walking stick. Two months ago lifting 25-pound bag caused pain low in left back becoming severe. Present complaint sciatic pain, constant, stabbing, not worsened by coughing or sneezing. Foot, outer side leg to middle numb, partial foot-drop, inability to extend toes. Tender sacroiliac joint: procaine into ligament; 10 minutes later could weakly extend toes and walk without limp, numbness left foot outer side first. Ultimately complete relief from all symptoms (*Skillern, J.A.M.A.*).

Vinculitis, Sacrococcygeal.—Matron, 30, 3-para, coccygodynia at times for years. Wincing sacrococcygeal ligament: efocaine; pain relief, no recurrence. Ablation of coccyx not indicated.

Vinculitis in other joints yields ditto.

II. Somatic Nerve Blocks *en passant*

Done in cases coming up during these investigations will be briefed here.

Great Occipital for Tic.—Woman, 91, in severe attack of tic of neuralgia Cr5 seemingly from spasm of lateral pterygoid was given gum to chew just before alcohol block of great occipital (R) to remove stimulus from motor nucleus Cr5 (Fig. 7): immediate relief, smiled, chewed with gusto. Five similar cases, same results.

Great Occipital for Zoster.—Watchman, 68,

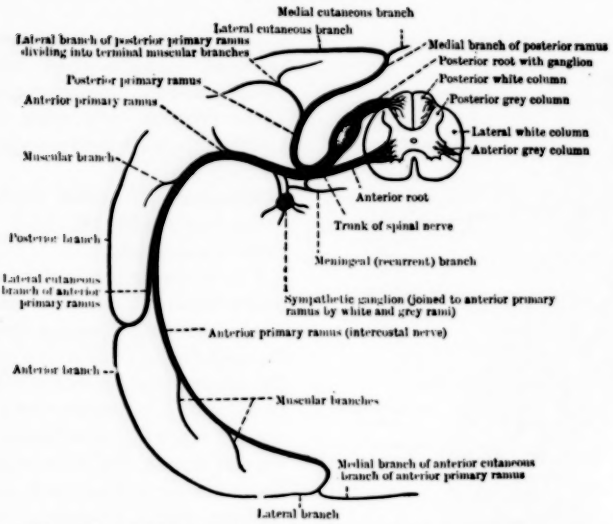
Medial cutaneous branch
Lateral cutaneous branch
Lateral branch of posterior primary ramus dividing into terminal muscular branches
Medial branch of posterior ramus
Posterior root with ganglion
Posterior primary ramus
Posterior white column
Anterior primary ramus
Posterior grey column
Lateral white column
Anterior grey column
Muscular branch
Anterior root
Trunk of spinal nerve
Posterior branch
Meningeal (recurrent) branch
Lateral cutaneous branch of anterior primary ramus
Sympathetic ganglion (joined to anterior primary ramus by white and grey rami)
Anterior primary ramus (intercostal nerve)
Anterior branch
Muscular branches
Medial branch of anterior cutaneous branch of anterior primary ramus
Lateral branch

Figure 6. Origin and distribution of a typical spinal nerve. (Cunningham: Text-book of Anatomy. 7th ed. New York: Oxford University Press. 1937.)

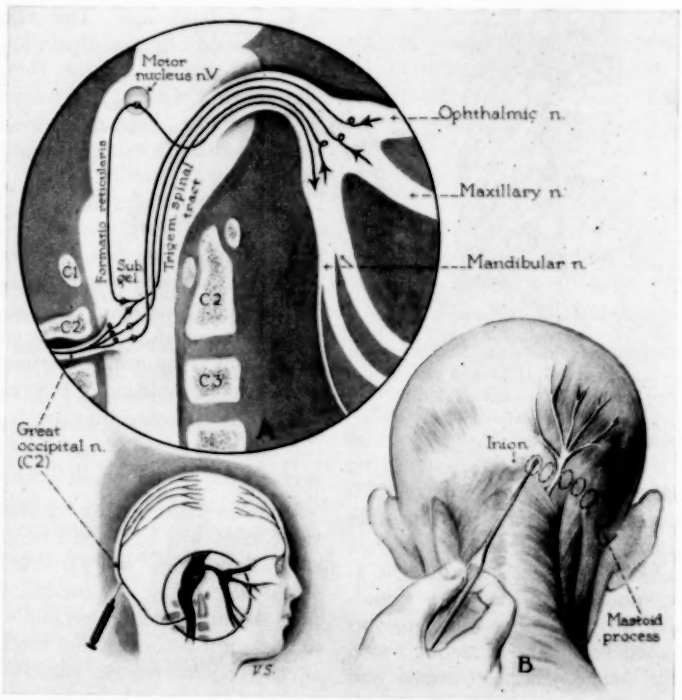

Figure 7. Author's conception of contact between C2 and Cr5. Note reflex connection between mandibular fiber in trigeminospinal tract and motor nucleus of Cr5. Technic shown for blocking great occipital nerve. *(Skillern: Arch. Neurol. & Psychiat.)*

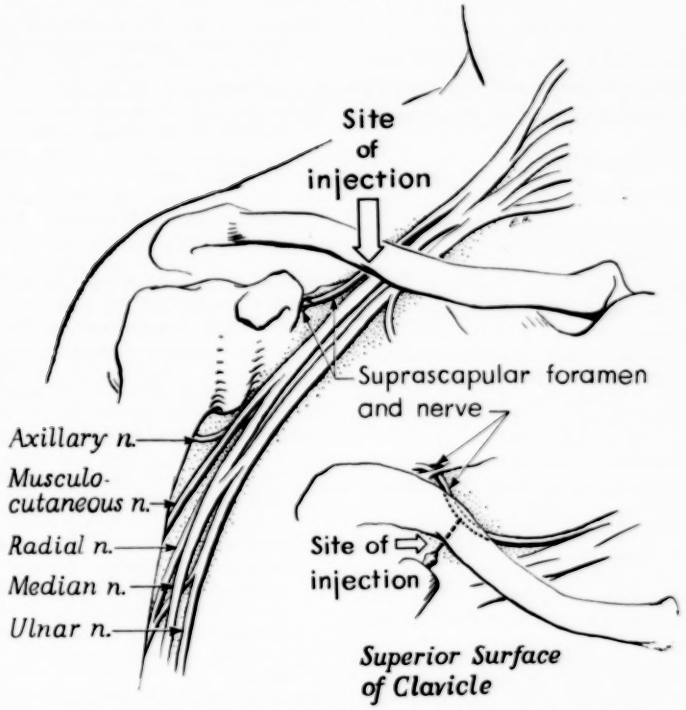

Figure 8. Author's anterior approach for blocking suprascapular nerve. Clavicular notch not clearly shown, better felt. *(Skillern: IBID.)*

for 6 weeks pain in and above left orbit, worsening vision, palm-sized area left forehead like raw beef: alcohol block GO; immediate pain relief; next day raw area dryer, beginning to heal. Two other cases, 1 acute, other chronic (scars, post-zoster neuritis) similarly relieved.

Great Occipital Neuritis.—Causes occipitofrontal headache, head on pillow, combing hair painful. Alcohol block GO relieves. One case associated migraine: both relieved. Effect on Sludder's and Ménière's problematic. *(Skillern, Archiv. Neurol.)*

Causalgia of Arm Stump.—Somatic (spasm of rotators) and somato-sympathetic (burning, sweats, etc.) symptoms and signs permanently relieved in 3 cases by alcohol block of suprascapular nerve (Fig. 8). Many brachialgias also relieved by this method. Hyperasthesia, pain over deltoid typify SS neuritis. Impact of needle radiates pain up neck, down arm, to shoulder joint. *(Skillern, Archiv. Neurol.)*

Causalgia of Thigh Stump.—Attorney, 48, 6 years ago mid-thigh amputation, since then severe burning, muscle spasms in stump. Rotators, adductors stilled by alcohol block of obturator nerve: immediate relief, continuing now 8 years. Two more similar cases. *Impact of needle on nerve radiated severe pain to midst of burning area of stump.*

Neuritis of Posterior Sacral Plexus.—In examining cases of sciatica the author has found wincing tenderness over sacrum at its second foramen (1 cm. below and mesial to posterior inferior iliac spine). Perhaps the little nerves of this plexus are pinched in transiting a spastic multifidus: at any rate they irritate the parent sacral plexus and the author has cleared up many a case of "sciatica" by alcohol block of the second member of the posterior sacral plexus, 3 cm. deep to the top of the foramen through which it emerges. The layout is not dissimilar to that of the suprascapular nerve just considered, in that 2 great parent plexus can be irritated by tiny nerves subjected to pressure and/or drag. Truly examples of the tail wagging the dog!

Comment

Eight years' added experience with this method have established that—using the indicated technic—the reactions described are inevitable.

Summary

(See page 1)

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MINOR NEUROLOGIC SIGNS AND SYMPTOMS FOLLOWING INSULIN COMA THERAPY

DEWEY K. ZIEGLER, M.D.*

Occasional patients following a course of insulin coma treatment present complaints pointing to dysfunction of the nervous system. The severe but rare complications of the treatment, aside from prolonged coma, are hemiplegia, aphasia, facial paralysis, and seizures (7, 8). More common are the complaints of generalized weakness, numbness and tingling of the extremities, and blurring of vision. In order to assess the incidence of these symptoms, and to attempt to obtain data which might explain them in some degree, routine neurologic examinations were made on a series of patients before and after a course of insulin coma treatment.

Case Material and Procedure

Twenty-two young schizophrenic patients who had no history of neurologic disease or of previous insulin treatment for their psychosis were examined by the author before, or immediately after the beginning of, a course of insulin coma therapy, and again within a few days following the conclusion of the treatment. There were 11 female and 11 male patients; ages ranged from 17 to 37. The total number of treatment days varied in the different patients from 14 to 80, with the mean being about 40. The total number of days of coma-depth treatment varied from 4 to 49, with the mean being about 30. The insulin treatment in those cases with few treatment days and few comas was terminated because of prolonged insulin reactions. Three cases which had been examined prior to insulin treatment had prolonged comas of one to four days' duration, and were examined subsequently, as soon as they were able to speak coherently and cooperate.

In addition to these 22 cases, 2 others, not examined prior to treatment, were examined a few days following the occurrence of a prolonged coma.

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In the course of the neurologic examination, muscle strength in the hands was tested by means of a dynamometer. Activity of the deep tendon reflexes was calibrated on a 1-5 scale. In addition to the sensory examination, which included timing of the vibratory sense on the external malleoli of wrists and ankles with the 128 tuning fork, the presence of subjective sensory symptoms was sought for by questioning concerning any "numbness or tingling." Visual acuity was tested routinely with the Snellen chart, and fundoscopic examination was performed.

Results

Of the 22 patients examined before and after treatment, although several complained of feeling weak and listless during and immediately following insulin treatment, only 2 showed any objective decrease in strength as measured by the dynamometer, one of whom was an individual who had suffered a prolonged coma and had become apathetic and inattentive. The decrease in strength in these 2 individuals was equal on the two sides, and in both cases was to the amount of 5-7 pounds. All the other patients either achieved the same result (within a range of 3 pounds) or improved—5 to the degree of 8 pounds or more.

Seven of the 24 patients (28 per cent) showed, following treatment and not before, a tendency to unsteady gait with side-to-side staggering on the heel-to-toe walking test. Four of these 7 had undergone a prolonged coma in the course of treatment, and the other 3 had had a fairly prolonged course of treatment (49, 53, and 57 treatment days, respectively). In none of these patients could a sign of loss of position or vibratory sense (appreciation of less than 10 seconds' duration of vibration) be detected. In 2 patients there was moderate difficulty with co-ordination tests in arms and legs (succession movements, finger-to-nose test, heel-to-shin test). The gait disturbance lasted for one to two weeks.

In only 3 patients was there any change in

the level of reflex activity after treatment, and in all cases the change was minimal—one grade drop on the 1-5 scale in 2 cases, and a one grade rise in the other.

Thirteen patients of the 24 (54 per cent) complained of some degree of abnormal sensation following their course of insulin treatment. Most common was a feeling of numbness and tingling in the fingers, less commonly in the toes. Four patients felt peculiar numb sensations over the chest and upper part of the back, and 2 more experienced paresthesias in the region of the face, particularly the nose. Of the 13 patients, 4 had undergone a prolonged insulin coma. In 2 of the patients with sensory complaints a slight stocking-type superficial hypalgesia was present on examination following the course of treatment; in all others there was no demonstrable abnormality in the sensory examination. In only one case was there any detectable loss of position or vibratory sense, and that to a slight degree. The occurrence of these sensory symptoms was related to neither the dosage of insulin, nor the number of treatment days or days of coma—the variation in these factors for the patients with paresthesias being the same as for those without this complication, with the exception, as noted, of their regular occurrence in all save one of the patients who suffered a prolonged coma. The paresthesias lasted usually for a period of time of anywhere from a few days to three weeks.

Visual acuity was diminished after treatment in only 2 patients, and then only to a minimal degree (from 20/30 to 20/40 bilaterally) although a few patients who showed no loss of acuity still complained of visual blurring. One of these patients, an artist, was quite perturbed by his complaint (which was unilateral) and a consulting ophthalmologist felt it was due to "serous retinitis." Except for the latter case, the fundoscopic findings in the patients before and after treatment showed no change. One patient developed slight nystagmus after the course of treatment.

Comment

The findings of unimpaired and increased muscle strength after treatment is interesting in view of the lassitude shown, and fatigue complained of by these patients. The latter sensations are, then, either psychologic or reflections of impaired function of some elements of the nervous system not directly concerned with motor performance. Similarly, although visual blurring was an occasional complaint, in no case was the presence of any significant degree of diminished vision documented. It may be that the blurred vision is a sensation associated with the vertigo experienced by patients immediately on recovery from the coma; several stated that visual symptoms were noticed, or were pronounced, only for a brief time when they were "coming out" of treatment. Behavior of patients at this time also suggests that they have distorted and impaired visual perception. The preservation of normal fundoscopic findings throughout the course of treatment in all save one case confirms a previous report (3).

An unsteady gait following treatment was found only in those patients who also complained of paresthesias, and it is thought that the gait disturbance is a reflection of impaired proprioceptive sense, rather than of defective cerebellar function, especially in view of the lack of other evidence of cerebellar dysfunction and the presence of other evidence of sensory disorder (paresthesias). Although no deficit was detected in the testing of vibratory and position sense, gait is thought by many to be a more sensitive indicator of the status of these modalities than other tests.

The most striking finding in this study was the high incidence of paresthesias, in 11 out of 22 patients, and in both those examined after prolonged coma. Stern, Dancey, and McNaughton (9) who are the only authors to have commented in detail on this phenomenon, found it in only 10 per cent of their patients. It is true that all the patients reported here were specifically asked concerning the presence of abnormal sensations, and this questioning introduces the element of suggestibility. It is felt, however, that the findings are not substantially affected by this factor since only those patients were counted who elaborated in detail on their sensory complaints; furthermore, all patients were also questioned concerning the presence of persistent blurring of vision; only 2 acknowledged this complaint, and that to a minimal degree.

The problem of whether the paresthesias are

evidence of a peripheral neuropathy is an unsettled one. In favor of this theory is the fact that the sensations usually occur in the peripheral part of the extremities, bilaterally, and in an occasional patient (in 2 of this series, one in Stern's), objective testing elicits superficial sensory loss in a distribution similar to that of other neuropathies. Also in support of the peripheral nerve hypothesis is the fact that Kastan (5), investigating the reaction of the medial, ulnar, and peroneal nerves to galvanic and faradic stimuli in patients two to four hours following insulin coma, frequently found a partial reaction of degeneration. If, however, these patients' symptoms are evidence of damage to peripheral nerve structures, this damage is apparently strictly confined to the superficial sensory elements since muscle strength increases and there is no change in reflex activity. Also distinguishing this kind of neuritis from the usual peripheral neuropathy is the fact that paresthetic sensations are frequently felt in the torso and midline structures, for example, the nose and back. Stern et al. also reported cases with disturbances of taste and smell.

The alternative hypothesis would be that some portion of the central nervous system sensory pathway is affected by repeated profound hypoglycemia. Because of the profound affective changes often induced by the treatment one might think of the thalamus, where known lesions are frequently associated with mood changes (4). Disturbed sensation in midline structures, disturbance of taste and smell, and disturbed gait would also fit better a hypothesis of a thalamic lesion. There are, however, no data on which to decide this question.

The evidence suggests that, whatever the site of the nervous system chiefly affected, repeated or prolonged hypoglycemia is the factor associated with these sensory disorders. As in Stern's cases, in the present series blood counts were normal, and there was no evidence of other systemic disease to account for the neurologic symptoms. All patients took vitamin B complex tablets three times daily during the course of treatment. Concerning the role of hypoglycemia itself, 4 of the 5 patients who suffered a prolonged period of hypoglycemia emerged with definite senory complaints, and 3 other patients gave clinical evidence of exceptionally deep coma (convulsions or stertorous respiration). Most of the cases reported by Stern also had seizures. One of his cases was also reported to have had transient paresthesias relieved by intravenous administration of glucose.

Current theory equates the effect on the nervous system of large doses of insulin with that of anoxia (2). It is well known that the peripheral nerve is more resistant to anoxia than central nervous system structures; Bartley and Heinbecker (1) demonstrated that peripheral sense-organs and nerve fibers in the experimental cat do not participate in the "insulin excitatory effect," and that "the peripheral synapses, peripheral sense organs, and axons are unaffected (by the action of hypoglycemia) even just prior to the death of the animal." Why, then, should peripheral sensory structures frequently be the only ones of the whole nervous system to give clinical evidence of disturbance following a course of insulin coma? One can only speculate. One possibility may be that this neuropathy is not related to hypoglycemia and anoxia, but to the abrupt and profound fluctuations in blood sugar induced in these patients. An analogy might be drawn to the neuritis seen in diabetics where failure of regulation and resulting profound fluctuations in blood sugar has been incriminated as an etiologic factor (6). Even if this were true, however, one would still not know the relation of the blood sugar to nerve function.

It would seem probable that there are numerous changes in the nervous system of patients undergoing insulin coma, but the only ones giving rise to symptoms which we clearly see as related to neurologic dysfunction are sensory symptoms; and these seemingly occur for the most part after prolonged or extremely deep comas. It may be that the common fatigue, "dullness," and distortion of perception are also symptoms of central neurologic dysfunction, and that only those who undergo exceptionally deep or prolonged coma show in addition the sensory (peripheral?) disorders. But whereas the symptoms of minor degrees of dysfunction of the peripheral nervous system are easily recognized and we have little difficulty distinguishing the boundaries of the normal, such is not the case with the central

nervous system where we have no way of knowing the complex and as yet vague parameters of normal function, and thus of the abnormal.

Summary and Conclusions

1. Twenty-two patients were given complete neurologic evaluations before and after a course of insulin coma therapy. Two additional patients were examined following prolonged insulin comas.

2. No marked changes were demonstrated in muscle power, deep tendon reflexes, or visual acuity.

3. Seven patients showed some unsteadiness of gait following the course of treatment. Four of these had suffered a prolonged coma, and all experienced sensory symptomatology.

4. Thirteen patients experienced paresthesias of some sort following the course of treatment. Two of these showed a considerable degree of demonstrable sensory loss.

5. The significance of the high incidence of paresthesias, and their relation to a possible peripheral neuropathy or central nervous system lesion is discussed. The suggestion is offered that brain dysfunction is a common though unrecognized sequel of insulin coma treatment, accounting for some of what are now thought of as nonspecific symptoms.

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A CASE OF SELF-CASTRATION

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Self-castration is a grave antibiologic act, and its occurrence is not common. Reports of such cases in the literature are rare, most of them consisting of brief communications (1, 2, 3, 4, 6) dealing with the surgical or the sensational aspects of the cases. The only extensive psychiatric contribution to the subject is to be found in Lewis' article on "The Psychobiology of the Castration Reaction" (5), which, aside from giving a name to the act (Eshmun complex, from an old Phoenician myth), recounts a number of cases in detail from the psychiatric standpoint.

Every case reported in the literature has occurred in an individual who was manifestly psychotic, delusional, usually schizophrenic. (Two cases suffered from organic psychoses.) In every instance the self-castration fit into the delusional system of the patient, and served one of three conscious purposes therein: (a) atonement, as for forbidden sexual wishes; (b) self-cure, as for masturbation; (c) elevation to a higher plane of existence, as by communion with God through self-purification.

The patient presented here is of interest because he fulfills none of the criteria outlined above. He was a 44-year old white merchant seaman, unmarried, who was admitted to Bellevue Hospital on Dec. 31, 1951, after having castrated himself by cutting out his testicles with a razor blade. He stated that he had been drinking heavily for about three weeks since coming off his last ship. On the day of the event he went out, drank for several hours until he was drunk, went to his room to sleep it off and awoke to find himself covered with blood below the waist. After receiving emergency treatment he was brought to Bellevue. He was unable to recall any unusual events of the day, nor could he recall anything that happened between the time he lay down in bed and the time he awoke with the act already performed.

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The patient was the second of 4 brothers born in New England of American-born, Roman Catholic parents. His father deserted the family when the patient was four years old; the patient had no memory of the father until the latter's return when the patient was 14. From that time, however, the patient recalled that the father drank heavily on week ends and became extremely abusive. The patient developed a profound contempt and distaste for him as a result.

His mother the patient described as a "fine person" with whom he was fairly close but no more so than were his brothers. He felt that there had been no unusual attachment, nor had there, he felt, been anything remarkable in his relations with his brothers or in any other aspect of his childhood. He could recall no childhood phobias.

At 19 he left home to come to New York, but after a few months he went to California, where he worked sporadically until, at about the age of 20, he went to sea for the first time. He had, with the exception of a few brief periods of shore work, been a seaman ever since. "It is," he averred, "a fine life for a single man." He had had no contact with his family in years.

The patient said he was single because "I never met the right girl." He had had only one prolonged relationship with a woman, this about ten years previously with an artist who rejected his proposal of marriage. He was not terribly disturbed by this rejection. He never had sexual intercourse with her, and had not even desired it. "She was more a good pal than anything else." He had had fairly frequent intercourse since the age of 17, but only with prostitutes and casual pickups. Cunnilingus, fellatio, and homosexuality were all vehemently denied, being regarded as "unnatural." The last sexual intercourse was, he said two weeks prior to admission, with a prostitute.

Though he had always wanted marriage, he had never wanted to have children. "I always pictured that when I found the right girl we'd

be buddies, with no outside interference. Even children would be excluded, because I'd want her all for myself."

The patient described himself as a generally quiet and cheerful man who disliked and avoided fights, who had a lot of friends, and who enjoyed intellectual pursuits. Periodic drinking had, he said, been a problem to him for 15 years; the onset was gradual and insidious, from social drinking. On examination he appeared to be a passive, submissive man, slightly but not significantly depressed. He was quite matter-of-fact and philosophical about his self-mutilation—"I just have to adjust to it, I guess. It's done and there's no use crying about it." He couldn't begin to account for having done it. He told his story coherently, logically, and fluently, and no delusions or paranoid trends of any kind were elicited. Sensorium was intact.

The history showed that the patient had had a number of previous admissions in the preceding two years. The first was in January 1950, when he was found in a hallway nude and brandishing a knife, threatening to jump out a window. On that admission he was acutely alcoholic and confused. He was said to have had a mild convulsive seizure in the admitting office, followed by another on the ward. The following day he was unresponsive, showed absent reflexes in the upper extremities, and had a right Babinski sign. Spinal fluid was normal. He was observed for a possible subdural hematoma, but three days later was considerably improved, though still disoriented, dysarthric, and anomic. By the seventh day he was clear mentally and was discharged. Psychiatric examination at that time was entirely negative, and the patient was discharged with a diagnosis of psychosis due to alcohol, cleared.

His second admission was in March 1950, when he entered after a prolonged alcoholic bout, tremulous and somewhat depressed. Two days later he was entirely clear and was discharged with a diagnosis of alcoholism.

The third admission was in May, 1951. He was sent to Bellevue from another hospital with the following note: "This 44-year-old American seaman appeared in the OPD today in a tense, agitated, plaintive, almost tearful state, urgently requesting help. . . . Some of his remarks follow: 'I want to be loved . . . I want to be more like a girl. I want to have my penis and scrotum cut off, have my testicles pushed up into my abdomen—I've done that myself; then get some injections to make my mammaries grow. Please, doctor, won't you help me to be like a girl . . . I want to wear my pretty dresses with lace fringes . . . I bought a maid's uniform at Macy's and want to be a servant woman for some sophisticated, older artist woman. I'll scrub floors for her—do anything . . . I want to be more of a child, not just a girl . . . Why doesn't anyone love me? They can call me cunt-lapper, but that's my business. I've never done anything wrong, like playing around with little girls or married women. They've all been older women . . . If I can't become a little girl, the only thing left for me is to commit suicide, but I'm afraid to do anything like that.' "

He was described as being mildly intoxicated, with no ataxia, dysarthria, or disorientation, but with a slight alcoholic odor to his breath. He complained that he had reached the point where he could no longer restrain his transvestic impulses; no longer being satisfied with dressing like a female and "swooshing around" in his room, he felt he had to do it in the street.

On examination at Bellevue the following day he denied any recollection of the material quoted, asserting that if he had said any of those things he must have been in DT's. He appeared slightly depressed and was described as a whining, hostile individual, but with no indications of psychosis. He admitted transvestism but minimized it. He was discharged with a diagnosis of psychosis due to alcohol, cleared.

In the light of the information from the records, the patient was questioned again. He again denied any recollection of having made any of the statements attributed to him, and denied all the material cited therein except for the transvestism. At nineteen he was told by many women that he was attractive, and a man once suggested to him that he might be a good female impersonator, because of his good looks. He found the idea inviting because it offered considerable remuneration, so he bought some women's clothes and tried them on in his room. He found, however, that he did not look attractive, became disgusted and got rid of the

clothes. He denied ever having owned or worn women's clothes since.

Sodium amytal interview was completely unrevealing. Electroencephalogram was reported as showing an abnormal EEG containing a moderately dysrhythmic pattern of excessive fast activity, some slightly paroxysmal and moderately slow activity and spike-like potentials. The findings were not clinically specific. Psychometric tests revealed an IQ of 115, placing the patient in the bright average range. He appeared to be an intact but extremely evasive personality whose conception of role was fixated at a very immature level, with identification with youthful figures and with the strongest attachments expressed for the mother. He was introversially inclined and showed little capacity to relate emotionally, though his excellent social judgment permitted him to maintain superficial relationships well. His defense system appeared brittle and precarious, consisting predominantly of such mechanisms as avoidance and withdrawal. Under intense emotional stimulation it showed a tendency to break down with the eruption of unacceptable homosexual and aggressive impulses.

Discussion

Diagnosis.—It was clear from the outset that this patient was different from the usual case of self-castration. He was not delusional, not paranoid, the act seemed to fulfill no conscious purpose and he was not, it appeared, demonstrably psychotic at the time of the examination. The only items that suggested psychosis were the act itself and the patient's bland acceptance of the situation. It was apparent, however, that the blandness was encapsulated; i.e., it was related solely to the castration. In all other matters discussed the patient was emotionally appropriate and responsive, showing no demonstrable break with reality.

The castration itself was marked by its apparent impulsiveness, the fact that pre-existing wishes of this kind had erupted into consciousness at least once in the past, and the lack of associated delusional thinking or action. These clinical considerations, along with the history of his incapacity to relate himself to people and the data obtained from the psychometric tests, led to the impression that this was an isolated impulsive act in a man with a schizoid character structure who was not psychotic. The prolonged alcoholic bout and the borderline defect in electrocortical functioning may be considered mechanisms that facilitated the eruption of the impulse.

Dynamic Considerations.—The following data contribute to an understanding of the unconscious motivational forces leading to self-castration in this patient: (a) the patient's bland attitude after the accomplishment of the act, (b) his productions relating to his feminine and transvestic wishes, (c) his attitudes toward marriage and children, and (d) the history of his relations with women. The patient's blandness and complacence in the face of so catastrophic an occurrence suggest that the act had at least partially solved an unconscious conflict, that an unconscious wish had been gratified, and that the patient had achieved something even more important to him than his physical integrity.

The nature of the conflict and of the unconscious wish is elucidated by the history. Throughout his life, this man had formed no object-relationship with a woman, except for the one with the artist whom he wanted to marry. This was a nonsexual relationship, and the patient's conception of marriage was one that, for him, excluded children and, possibly, sex as well. What he wanted was a "pal" whom he could have "all for myself. I like children, but I like myself better." From these facts we may conclude that this man sought a dependent narcissistic, oral relationship with a mother figure. As he stated in his interview at the other hospital, "I want to be taken care of, like a little girl." To this end the patient became a transvestite.

This hypothesis would account for the fact that, with his transvestism and his desire to be a girl, he never became a homosexual. He did not seek a passive love relationship with the father; indeed, he had never reached the developmental level that might lead to such a wish. His desire was a completely dependent one for the mother, at the most primitive level. The possibility of genital sexuality was enough to threaten this sort of relationship. In order to defend himself against this threat, and thus solve his unconscious conflict, the patient, in

an impulsive violent outburst, possibly precipitated by some experience which he had either repressed or consciously withheld, and facilitated by a prolonged alcoholic bout which weakened his defenses (and perhaps brought his oral cravings to the fore) castrated himself.

Epilogue.—The patient was discharged on Jan. 24, 1952. Needless to say, he continued to drink, and on Feb. 2, 1952 he was admitted to another hospital in an alcoholic, depressed state. Though the alcoholism cleared promptly, the depression persisted, and four EST were administered, with good results. After his discharge on Mar. 11, 1952, the patient made frequent phone calls to the doctor at that hospital, demanding re-admission, whining and complaining, and obviously drunk. Finally he returned to Bellevue on Apr. 6, 1952, drunk and dilapidated but showing no overt psychotic trends. He was discharged on May 5, 1952, appearing very much as he had before—alert, cheerful, passive, and quite intact.

On May 14, 1952 the writer received a letter from the patient, and early in June a telephone call, both attesting to the patient's good adjustment; he appeared to be sober, and had been working on land. He has not been heard from since.

Conclusions

This case is, to our knowledge, the only one on record of a self-castration in an individual who was not frankly and clinically psychotic, though a "latent" psychosis may be postulated. A diagnosis is suggested, and a tentative dynamic formulation is offered.

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RARITY OF CONCURRENCE OF PSYCHOSIS AND RHEUMATOID ARTHRITIS IN INDIVIDUAL PATIENTS*

Report of a Case

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Psychosis and rheumatoid arthritis are clinical entities of high incidence and great chronicity. One would accordingly expect them to coexist in a large number of patients, but such coexistence is extremely rare.

Gregg (3) states that among 3,000 autopsies of pscychotic patients, the Massachusetts State pathologist noted no frankly arthritic joints. In 23 years, from 5,766 nonpsychotic patients, the Robert B. Brigham Hospital in Boston transferred only one case to the Boston Psychopathic Hospital. Nissen, in a visit to a state mental hospital, found no arthritics among 2,200 patients, and in a group of 500 arthritics he found only 3 cases with coexistent mental disease. In all 3 of these cases the arthritis was due to gonococcal infection. Among 1,962 patients at a state school for the feeble-minded, no patients bedridden or seriously handicapped by arthritis were found (359 of these cases were more than 40 years of age). Based on these and other observations, Gregg advanced the idea that the placid, protected existence of mental patients might protect them from development of diseases known to be influenced by emotional stress and strain.

Nissen and Spencer (4) concluded that the schizophrenic and the arthritic are very similar in personality structure, with the former escaping from reality by phantasy formation and the latter by somatic or physical pathways providing functional disabilities.

However, since many authors have observed the occurrence of psychotic episodes in a certain percentage of patients undergoing therapy with ACTH or cortisone for various conditions, it appears more likely that the metabolic imbalances present in psychotic patients (1), or some endocrinal disturbance, render these patients impervious to the onslaught of rheumatoid arthritis and, possibly, other collagenous diseases. Support of this view is found in the work of Dobriner and others (2), who discovered marked adrenal cortical dysfunction in one case of rheumatoid arthritis; and in the effect of pregnancy, attacks of jaundice, and administration of ACTH and cortisone in causing remissions of rheumatoid arthritic disease.

The hospital with which the authors are associated is predominantly neuropsychiatric but has small medical and surgical services. The patients are almost exclusively Caucasian males. In this hospital, of 9,000 admissions to the various wards over a period of five years, there were 119 admissions of 80 patients (some patients had repeated admissions) who had a discharge diagnosis of rheumatoid arthritis of multiple joints or rheumatoid arthritis of the spine.

Seventy-six of the 80 patients were normal mentally. Of the patients (4) admitted for psychiatric reasons, one had epilepsy plus rheumatoid arthritis of the spine, one was an alcoholic, and one had a diagnosis of psychoneurosis. Only one patient was acutely psychotic and had active rheumatoid arthritis.

Because of the rarity of concurrence of these clinical entities, this last case is presented in some detail:

Case Report

J.H.S., a 34-year-old white male, was admitted to the hospital on Sept. 23, 1950. He is said to have demonstrated a low intellectual level since infancy,

* Pubished with permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration. The statements and conclusions of the authors are the result of their own studies and do not necessarily reflect the opinion of the Veterans Administration.

and several members of his family are said to have been feeble-minded. He entered military service Jan. 1, 1942 and was hospitalized for psychiatric study several times, the last hospitalization resulting in his discharge from the service Feb. 10, 1943 with a diagnosis of psychosis with mental deficiency. During that hospitalization he exhibited peculiar behavior, perplexity, visual hallucinations, paranoid trends, and combative episodes. After discharge from the service he was hospitalized on three occasions because of his mental condition, and the diagnosis of psychosis with mental deficiency was continued. Later, in 1949 and again in 1950, he was hospitalized in another city for rheumatoid arthritis. At the time of his last hospital admission he appeared inadequate, mildly perplexed, and of low intellectual level. He complained of pain in various joints. X-rays revealed rheumatoid arthritic changes involving the hands, wrists, elbows, knees, spine, and sacroiliac joints. On physical examination he showed moderate enlargement of both knees with no heat, redness, or swelling. There was slight limitation of flexion and extension of the right elbow. He had a mild anemia. Sedimentation rate ranged from 13 to 36 mm. per hour. ACTH, 10 mg. IM, q-6-h. for 12 days, followed by cortisone, 100 mg. IM, daily for two days, was given, with no improvement of the symptomatology. On the second day of administration of cortisone the patient became very tense, agitated, restless and antagonistic toward other patients and the ward personnel. He expressed paranoid delusions which slowly subsided, along with improvement in his other mental symptoms, after coristone was discontinued. Chrysotherapy was begun, and considerable improvement was noted in the arthritic condition. The patient left the hospital without permission on July 12, 1951. Follow-up studies were done two months later, at which time the ex-patient was found to be neat and clean but nervous and restless. He was not working and there was evidence that he frequently drank alcoholic beverages to excess. He continued to complain of joint pain and was referred to a clinic for out-patient treatment.

Discussion

The extreme rarity of cases in which psychosis and rheumatoid arthritis or rheumatoid spondylitis coexist has been a topic of comment, though the subject has not received the attention it would appear to deserve. The reason for the apparent antipathy between psychosis and rheumatoid disease is not known. Since it exists, however, one might advance the theory that the basic imbalance in steroid production and/or metabolism that is believed to exist in rheumatoid arthritis is blocked by metabolic or endrocrinal changes accompanying the psychotic state.

It may be significant that our patient, while psychotic and exhibiting paranoid trends, has never been diagnosed as having schizophrenic reaction. A review of the literature available to us revealed no instance of concurrence of schizophrenic reaction and rheumatoid arthritis or rheumatoid spondylitis.

Summary

1. Statistical data illustrating the rarity of concurrence of psychosis and rheumatoid arthritis are presented.

2. A review of 9,000 admissions to a predominantly neuropsychiatric hospital disclosed only one case of concurrence of these two clinical entities.

3. That case is presented and a theory advanced concerning the cause of the rarity with which such cases are observed.

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V. A. Hospital
Tuscaloosa, Ala.

SOCIETY PROCEEDINGS

NEW YORK NEUROLOGICAL SOCIETY AND NEW YORK ACADEMY OF MEDICINE, SECTION ON NEUROLOGY AND PSYCHIATRY

Joint Meeting, November 10, 1953

James H. Wall, M.D., Chairman, Section on Neurology and Psychiatry, presiding.

COLOR REACTIONS OF EPILEPTIC AND NORMAL SUBJECTS. DR. WILLIAM D. VOORHEES (by invitation) AND DR. OSKAR DIETHELM.

Observations on epileptic art, Rorschach tests, epileptic deliria and deteriorations have given the impression that red, yellow and orange have particular significance for these patients.

The following groups were studied: 32 epileptic patients who needed care in the Manhattan State Hospital because of deterioration or very frequent convulsions; 24 ambulatory epileptic patients without signs of deterioration, and 14 controls (female college students). In the first experiment the three pictures of the Stanford-Binet scale and Bobertag's picture of "blindman's buff", all in color, were shown. Among the deteriorated patients, colors were mentioned spontaneously by 28 per cent, among ambulatory patients by 12 per cent, and among controls by 7 per cent.

There was no special color attraction, except to red by the deteriorated group. There was no indication that the significance of color was altered. A color performance test, using Munsell Matched Colors, with different brilliance and intensity of hue indicated the same preference in epileptics and non-epileptics, i.e., in order of choice of blue, green, red, purple and yellow.

Discussion.—DR. DONALD J. SIMONS: I think that most of us have seen comments to the effect that painters like van Gogh who had some type of mental illness, possibly epilepsy, are predisposed to brilliant colors. Many of his paintings show very brilliant yellow.

Apparently, the work of Drs. Voorhees and Diethelm demonstrates that the use of such coloring is a feature of the individual and not a feature of any disease process.

DR. RICHARD M. BRICKNER: Dr. Diethelm mentioned that the deteriorated patients studied were attracted to red. Are other patients also attracted to it? Is it perhaps a matter of the conspicuousness of red? Are not children in general attracted to red, or stimulated by it?

DR. ALEXANDRA ADLER: I should like to recall the experiments of Dr. G. Engerth and O. Poetzl in Vienna with relation to the paper presented this evening; when they examined children as well as brain-injured patients and studied them, a definite tendency on the part of children as well as brain-injured patients was seen to avoid the color of blue in their drawings.

DR. DIETHELM: In reply to Dr. Brickner's question in regard to children's reaction to red, I cannot offer any information.

In reply to his question about deteriorated patients, our advanced cerebroarteriosclerotic patients did not react like epileptics to the color red.

As far as Dr. Adler's reference to Dr. Poetzl's findings, I cannot answer that, except in our group we had no patients who had brain injuries.

Dr. Simons' point is of considerable interest; I had the same impression as Dr. Simons had. Fortunately a year ago a very complete publication appeared which gave the medical observations during the various confusional states of van Gogh. I was surprised to find when I read these studies that the brightest yellows did not appear when he was in the confused states and when his psychosis was in the progressive stage. We would expect in the state of confusion that the pictures would have the brilliant yellow for which he was famous, but sometimes in those periods when he was confused he used subdued colors.

SUCCINYLCHOLINE CHLORIDE AND GALLAMINE IN ELECTROSHOCK THERAPY: A COMPARATIVE STUDY WITH SPECIAL REFERENCE TO CARDIODYNAMICS. DR. WILLIAM H. LEWIS, JR. (by invitation), DR. D. JEANNE RICHARDSON (by invitation), AND DR. LAWRENCE H. GAHAGAN.

A comparison of succinylcholine chloride and gallamine in EST shows that, while both are effective neuromuscular blocking agents, succinylcholine possesses a number of advantages: (1) considerable saving in time due to its quicker action and more rapid recovery; (2) a more predictable dose-response relationship which helps to achieve maximal muscle relaxation without overdosage; (3) ease of detection of the time of onset of maximal relaxation since this occurs as soon as the muscle fascinations produced by the drug have subsided; (4) less production of mucous secretion in the respiratory passages as compared with gallamine, especially when gallamine's antagonist edrophonium is also used; (5) greater

acceptability of succinylcholine by the patient who awakens sooner and less drowsy; and, finally (6) the generally decreased risk which is associated with a shorter over-all period of absent or impaired respiration.

In 70 of 91 modified treatments the electrocardiogram was recorded continuously before, during and after treatment. Satisfactory tracings were obtained except during electric stimulation when the ECG was obliterated; however, the rate and rhythm of the heart could be detected by precordial auscultation during this period of electric interference. Cardiac arrhythmias, which were mostly premature ventricular contractions sometimes associated with coupling, occurred in over one-third (37 per cent) of the treatments during the post-stimulus phase. None of the arrhythmias were considered to be dangerous, and their appearance might be delayed for as long as 3 minutes after the electric stimulus.

An unexpected finding was the occurrence of cardiac arrhythmias in 7 instances, involving 3 patients, who had received preliminary medication of 2.4 mg. of atropine sulfate intravenously (which is sufficient to abolish completely the vagal control of the ventricular rate). This points to the existence of an extravagal factor of unknown origin in the production of post-seizure cardiac arrhythmias in EST. Since in 6 of these 7 instances the patient was well oxygenated at all times during the treatment, it would appear that the cause is not hypoxia. Perhaps the sympathetic division of the autonomic nervous system is implicated.

Discussion.—Dr. Lothar B. Kalinowsky: Research in the field of fracture prevention in convulsive therapy is of undeniable importance. I fully agree with the authors that curare and its derivates did not fulfill the condition of safety. Fatalities in ECT under curarization were all too frequent and in my own experience the only fatality I ever had in an unusually large number of electric shock treatments occurred in one of the relatively few cases I treated under curare.

I should like to ask the authors whether they compared their electrocardiograms with the electrocardiograms of patients treated with ECT without any premedication, where in the experience of most workers such arrhythmias do not occur. Also, whether the fact that vagus blockage with atropin reduced but did not eliminate arrhythmia entirely is considered by them as evidence that there is a myocardial damaging effect of the drug.

Dr. William Holt, Albany, N. Y.: I enjoyed the paper of Dr. Gahagan and his associates and would like to bring to your attention that a similar kind of study of the cardiovascular response was reported at the American Psychiatric Association meeting last May, (1953) in Los Angeles, by W. K. Nowill, W. Wilson, and R. Borders, from Duke, who took electrocardiograms on approximately 120 different patients given treatment with succinylcholine chloride. Their 42.5 per cent incidence of cardiac irregularities was, I think, significantly less than that reported here tonight.

Dr. Edwin J. DeBeer: Succinylcholine probably first exerts a depolarizing and then a competitive reaction; d-tubo-currarine is apparently chiefly a competitive inhibitor, yet both compounds produce a similar result. In other words, there is more than one way to produce a myoneural blockade of clinical value.

Myoneural blocking agents in clinical use today are highly specific in action. For example, succinylcholine has an intense action on the myoneural junction but leaves unaffected the similar cholinergic mechanism of the ganglion.

With respect to the action of these drugs on the heart and the circulation, I can speak only from laboratory experiments. Most of our work has been done on cats anaesthetized with barbiturates. Succinylcholine had no effect on the EKG of cats which were receiving large paralyzing doses of the drug. When anoxia was permitted to develop a rise in blood pressure resulted, as was expected. When anesthesia was very light, surgical manipulation produced increases in blood pressure since many reflexes were still in action. Succinylcholine does not abolish these reflexes and again a rise in blood pressure is to be expected.

Dr. Theodore R. Robie: There are variations between machines. Will Dr. Gahagan tell us what apparatus was used, and secondly, since the fact was not stated, are we to assume there were no deaths in this series?

Dr. David J. Impastato: The authors have presented a stimulating paper. I believe there is no question in anybody's mind that in electroshock-therapy at times, though rarely, we do need muscle relaxation. I do not recommend succinylcholine chloride (SCC) for routine use, especially if one employs for the convulsion an apparatus such as the Reiter, which produces a gradual and controlled convulsion.

Dr. Gahagan: In reply to Dr. Robie's questions, we used the Medcraft ECT unit model B-24. Also there were no deaths during treatment. Unfortunately there was a death by suicide after treatment.

With reference to the high incidence of cardiac arrhythmias in EST reported here, this is comparable to that found by Dr. Bankhead and his associates at the University of Texas. Incidentally they also reported two deaths in EST.

We too were very much surprised to find these cardiac arrhythmias despite the preliminary use of 2.4 mg. of atropine sulfate by vein. But it is a fact that this degree of atropinization did not prevent the arrhythmias, which were mostly premature ventricular contractions and not considered dangerous. This happened in 7 instances involving 3 patients and with both succinylcholine and gallamine.

Dr. William H. Lewis, Jr.: For the past ten years as consulting cardiologist at Rockland State Hospital I have had the opportunity to take part in a program of developing a more active electrocardiographic service. At first there was a considerable reluctance to give electroshock therapy to patients over 50 years because of supposedly unfavor-

able cardiovascular effects. As experience with electroshock therapy in older patients was gained, the age limit, so to speak, was raised. In all cases we must weigh the risk of treatment with the risk of the untreated psychiatric illness.

It is a great help to us who must make decisions about electroshock therapy in the presence of cardiovascular disease to realize that one has the protection of these agents which mitigate some of the dangers of treatment.

STUDIES ON MESCALINE: ITS ACTION OF THE CLINICAL AND BRAIN WAVE PATTERNS OF SCHIZOPHRENIC PATIENTS. DR. HERMAN C. B. DENBER, DR. SIDNEY MERLIS AND DR. WALLACE HUNTER (all by invitation).

The action of mescaline sulphate on the clinical and brain wave patterns of 25 schizophrenic patients was investigated. Clinically there was a primary emotional reaction in 15 patients and a primary ideational reaction in 10 patients. The electroencephalogram showed a decrease or disappearance of alpha waves in 20 patients, an increase in 4, and little change in 1. The reaction to mescaline following electroconvulsive treatment differed only in degree and intensity from that seen before therapy. Since mescaline can suppress the alpha waves, as well as high voltage burst and spike-wave activity, it is felt that this drug acts upon the diencephalic centers. It is, therefore, postulated that the "mescaline psychosis" results from an interruption of the corticodiencephalic pathways.

Discussion.—DR. PAUL H. HOCH: Dr. Denber and his associates presented a very interesting paper in which they confirmed the known fact that there is no correlation between EEG findings and mental activity under mescaline, and the same is true if we use other drugs, for instance, lysergic acid.

How mescaline acts, whether in a diffuse way or a localized way, we do not know. One thing, however, is known: that these drugs act preeminently on the nervous system. If we introduce mescaline, if we inject it into the spinal canal, the mescaline psychosis occurs instantaneously in every respect. Therefore the drug is absorbed and anchored in the nervous system nearly immediately. This is an important finding because some people tried to explain the mescaline action through some intermediary product which is produced in the liver. It will interest you if you want to stop the mescaline effect on a patient and you give this patient electroshock, the electroshock is ineffective. A patient who has a mescaline psychosis is not stopped by electroshock.

DR. DENBER: Insofar as we know, this present study is the first to show the site of action of mescaline in a purely objective fashion. I presume that it would be more appropriate to state that the mescaline psychosis is primarily the result of a diffuse subcortical action, involving not only the thalamus, but the brain stem as well. The cortex assumes only a secondary role. It may well be that the inability of psychosurgery to produce permanent results stems from the incorrectness of the assumption that the cortex is primarily involved.

NEW YORK NEROLOGLCAL SOCIETY AND THE NEW YORK ACADEMY OF MEDICINE, SECTION ON NEUROLOGY AND PSYCHIATRY

Joint Meeting, December 8, 1953

Richard M. Brickner, M.D., President, New York Neurological Society, presiding.

CONGENITAL INSENSITIVENESS TO PAIN. DR. MOSES J. MADONICK.

Generalized insensitiveness or indifference to pain may occur in three groups of cases, namely, the organic, the psychologic and the congenital. Schilder explained the "pain asymbolia" of the organic cases on the basis of a lesion in the dominant supramarginal gyrus. Rubins and Friedman postulated a defect in transcordical or integrative function. In the psychologic group, lack of appreciation of pain may occur in the psychoses, especially catatonic schizophrenia, in hysteria and in hypnotic states. The congenital group has pain insensitivity without any other neurologic signs. A case of congenital pain indifference is described in a 38 year old colored woman. She had had no pain "when I cut myself with a knife since I can remember. I never had a headache. I have no toothache." Neurologic examination disclosed besides the indifference to pin prick, a lack of appreciation of taste and indifference to threatening gestures. No pain was produced by muscle ischemia, by the injection of saline intramuscularly, by electrical stimulation of muscle. No headache was produced by histamine intravenously. No alteration of pulse rate or blood pressure was produced by placing the hand for ten minutes in ice. Electro- and pneumo-encephalography were normal. Skin biopsy revealed no changes in the cutaneous nerves. It is interesting to note that this patient had abdominal discomfort. Such dissociation between visceral and skin pain has been noted previously. It is not known whether the congenital indifference to pain is based on organic changes of the brain since no cases have been studied histologically. The indifference to pain may resemble such conditions as color blindness and word deafness.

Discussion.—DR. BERNARD L. PACELLA: Dr. Madonick is to be complimented for a most thorough study of his patient, and for a comprehensive review of the literature. At the Neurological Institute we have had the good fortune of having seen three cases of congenital indifference to pain in the past few years, all in children. Dr. Poser, a Resident at the Neurological Institute, has conducted careful neurologic testing of these children and the findings are pretty much the same as described by Dr. Madonick and others. I might add that the children showed no significant disturbances in other specialized sensory areas, such as gross temperature sense, tactile, proprioceptive, auditory and vibratory sensation, spatial orientation, visual sensation and color perception. Psychologic testing did not reveal any impairment, so far as can be determined, of the body image. Therefore, the insensitivity to pain, or "pain asymbolia," as Schilder called it, did not seem to us to be a failure to associate the perceptual experience with body image, but as a failure in the specific perceptual experience itself. An interesting question might be brought up at this point, namely, if a patient has never experienced pain, how can he experience the absence of pain? What is his conceptualization of pain when he is asked about it?

DR. EDWIN A. WEINSTEIN: I enjoyed hearing Dr. Madonick's paper very much, and I think his case is interesting. If you found a lesion of the supramarginal gyrus in this patient I think many people might have attributed absence of pain to that. I wonder why these cases are called congenital absence of pain.

DR. LAWRENCE H. GAHAGAN: I should like to ask what happens to the children who lack apperception of pain. I suspect most of them do not grow up. What is the outcome of these cases?

DR. MADONICK: In reply to Dr. Weinstein's question, I believe the condition is congenital for the reason that the patient has always had it. Color blindness and word deafness are somewhat similar conditions, and they are not necessarily noticed at birth, and still we call them congenital. Dr. Ziegler told me of a case at the Neurological Institute where at the age of four months they diagnosed this condition. I wish that he would say a few words about that.

DR. ABRAHAM M. RABINER: This classification of organic, psychogenic and congenital is misleading. Instead of "congenital", I would prefer the term "agenesis" or lack of development, or malformation. Pain is the mechanism that informs us of trouble within the body physical make-up whereas touch and repetitive touch vibration as well as all other avenues of waves of stimuli entering through the sensorium, acquaint us with the varying and multiform alterations in the environment. Sectioning a single pathway in the cord does not interrupt any of these channels. Dr. Browder has cut the posterior column tracts as well as the contralateral tracts in the ventral cord quadrant, and the patient continued to appreciate touch and vibration. Pain, on the other hand, can be completely interrupted by sectioning the spino-thalamic tract. I do not recall total bilateral loss of pain perception on an organic basis without a psychogenic component present.

It is probable that absence of development of the cortical structures normally present for appreciation of pain and temperature stimuli may occur.

DR. HENRY ALSOP RILEY: Under ordinary circumstances most neurologists believe that consciousness of pain is appreciated at the thalamic level; that there is a certain amount of consciousness concerned with pain which is mediated at the thalamic level. The factor of pain-consciousness contributed by cortical activity is the appreciation of the degrees of pain, the appreciation of the sharpness of the pin prick, and not the actual pain produced by the stimulus, which is registered at the thalamic level. Whether these disturbances of pain appreciation, pain asymbolia, are dependent upon alterations in the posterolateral or posteromedial portions of the ventral thalamic nucleus which receive the spinal lemniscus, or whether they are in the connections at a somewhat higher level, in the intrathralamic associations, I do not know, and I do not think that anybody will ever find out.

DR. DEWEY ZIEGLER: I saw an eleven month old infant with this condition at the New York Neurological Institute. The child was discovered to have no sensitivity to pain when it began to attract its parents' attention by chewing its fingers and tongue and banging its head on the wall. The child was average or above in general development and performance. On testing it showed no withdrawal from pin prick or painful heat stimuli. This fact is interesting since it is thought that flexion withdrawal from noxious stimuli is independent of the nervous system rostral to the spinal cord.

As far as prognosis is concerned, when we were discussing this case, we wrote Dr. Frank Ford about the outcome of the cases he reported in 1939 (Ford, F. R., and Wilkins L., Congenital universal indifference to pain, *Bull. Johns Hopkins Hosp., 62:* 448, 1938), and he gave the interesting fact that one of his patients had died of a ruptured appendix and painless peritonitis, another had suffered a painless fracture of the leg in the course of a football game.

DR. RICHARD M. BRICKNER: Do you believe that there are variations in the degree of pain perception or sensitivity, or is it an all-or-none matter?

DR. MADONICK: I think there are variations; there must be variations.

DR. BRICKNER: Dr. Libman years ago used to press the mastoid process as a test of pain sensitivity. I remember a woman with a broken rib who had only the most meager pain; it was through that we discovered she had generally reduced pain sensitivity.

DR. MADONICK: To Dr. Rabiner I wish to say I did not imply that there might not be any organic change in the brain; I do not know, and I do not think anyone else states that. It is congenital, it is probably related to the conditions of color blindness and word deafness; both of these are congenital, and I think it belongs to that group.

MEASUREMENT OF KNEE JERKS IN "SPASTICITY". DR. PHILIP S. BERGMAN, DR. GERALD G. HIRSCHBERG (by invitation) AND DR. MORTON NATHANSON.

Knee jerks were measured by recording the electromyogram on an oscilloscope after a constant stimulus. "Reinforcement" was also studied by a modification of the Jendrassik maneuver. The subjects were normal controls and patients with spastic paralysis (hemiplegia and paraplegia). Quantification of the reflex was possible by this method. Normal reflexes were characterized by variability in amplitude from time to time and by significant increase with reinforcement. Reflexes in spastic limbs varied little or not at all and were relatively unaffected by reinforcement. The reflexes on the unparalyzed side in the hemiplegic resembled those of the affected side, rather than those of normal subjects. These results are discussed in terms of the measurement of "spasticity" and the mechanisms of reinforcement.

Discussion.—DR. HARRY GRUNDFEST (by invitation): The knee jerk is a favorite and an important tool of the physiologist because at least a considerable portion of the response represents a monosynaptic reflex, a reflex which is mediated by only one junction, the afferent activating the motor neuron directly. This is true, I think, very considerably, although not entirely, and the fact that it is very considerably true enables use of this reflex to examine the function of the nervous system at its simplest level, at the monosynaptic arc, and particularly as the authors have done in the paper, to study the influences from other spinal levels. The enhancement of the reflex is generally viewed as a decrease of inhibitory downflow and at least in many animals is a general phenomenon following transection of the neuraxis at even the lowest proximal levels.

DR. S. BERNARD WORTIS: This is an important clinico-physiologic contribution and again demonstrates that a *unilateral* brain lesion can cause alteration in *reflex, motor,* and *sensory function on both sides.* Our present day clinical challenge is to develop finer clinical tools to detect such alterations—and such knowledge would help us to better understand the neurologic and the psychiatric patient.

DR. JOHN H. SCHARF: Since emotional stress has been mentioned as one of the modalities of bringing about "reinforcement", may we assume that the patients tested in this work were under considerable stress because of their disabling illnesses and that this emotional factor had already brought about an increment in the activity of the knee jerk and that this was clinically evident in the increased reflex of the spastic limb even before the experiment was applied?

DR. NATHANSON: I would not like the audience to leave with the idea that every hemiplegic's supposedly normal side showed reflex abnormalities. We have studied hemiplegics where the so-called normal side was within normal limits, according to these conditions of testing. However, abnormalities of the uninvolved side were found in approximately 28 out of 40 hemiplegics and that is significant. Another clinical point probably noted by almost everybody in the audience is that patients with apraxia due to lesions in the dominant hemisphere show the dysfunction in the ipselateral hand.

DR. THEODORE J. C. VON STORCH: I think all clinicians have again and again observed varying degrees of knee jerks in partially paretic patients, and the matter of degree should be taken very carefully into consideration. I would not want to leave the group here with the idea that it is impossible to reinforce reflexes in hemiplegic patients, which is generally not true.

DR. LOUIS BERLIN: Everybody is aware that sometimes in a spastic paretic extremity one can very readily elicit ankle clonus, and at other times it requires considerable repetition of the stimulus to evoke clonus. I think from this simple clinical observation it is apparent that reinforcement of the response can occur in the spastic extremity.

DR. JOSEPH MOLDAVER: I feel that it is impossible to duplicate the result on the same patient from day to day by using skin electrodes and therefore it would also be almost impossible to compare the results from different patients, and different clinical conditions. The use of surface electrodes may give an over-all idea about the condition of the muscle, but that would be a very rough estimate, and I still wonder whether it gives us more information than a good clinical examination. I think that in order to get a good qualitative evaluation of the reflexes with electromyographic studies it would be better to use needle electrodes, either monopolar or bipolar.

DR. BENJAMIN ROSENBLUTH: These tests and responses were under given conditions and always remained the same. I think every clinician changes the condition of taking reflexes in the paretic or the uninvolved side. Every clinician I know of has particular tricks in bringing out reflexes, and you cannot compare the clinical method of taking reflexes with those of the laboratory. In doing laboratory work the condition can be controlled, and we do not have that in the clinic.

DR. PHILIP S. BERGMAN: About the question of maximum stimulation, I am sure that we could get it, but it would be difficult to quantify.

About the repeatability of these experiments: they can be repeated over the course of time, and we have done so.

In regard to bilateral effects from a unilateral lesion, it is probable that nothing affects the nervous system unilaterally. An injury to the nervous system always has widespread effects; the problem is to develop methods sensitive enough to detect them.

THE RELATION OF PAIN THRESHOLD AND PAIN INTENSITY TO THE PHENOMENON OF EXTINCTION. DR. LOUIS BERLIN, DR. HELEN GOODELL (by invitation), AND DR. HAROLD G. WOLFF.

Extinction demonstrates a general principle of perceptual function. It is an expression of the perceptual dominance of one stimulus over other simul-

taneously acting stimuli. This phenomenon is brought into focus by conditions of the nervous system which alter sensory thresholds.

This formulation of the mechanism of extinction is supported by evidence from both normal subjects and those with lesions resulting in sensory defects. In normal subjects, extinction of a mildly painful stimulus can be effected by the simultaneous application of a more intense painful stimulus. In subjects whose pain thresholds are elevated as a result of a neural lesion, application of equally noxious thermal stimuli to normal and hypalgesic areas results in extinction of sensation in the hypalgesic area. Pain is then perceived only in the normal area. However, even in the presence of raised sensory thresholds resulting from neural lesions, extinction of sensation from either the normal or hypalgesic area can be effected. This can be achieved by the application of stimuli sufficiently different in their intensities as to make an intense stimulus capable of extinguishing the other weaker stimulus.

In those clinical states in which extinction of pin prick is demonstrated by stimulating corresponding contralateral areas, these studies indicate that extinction is a result of the differences in pain thresholds of the two areas. The differences in the pain thresholds of areas exhibiting extinction vary widely.

When a lesion of the nervous system reduces the effectiveness of afferent impulses on the central excitatory state, impulses coming from normally innervated areas become propotent and the phenomenon of extinction is readily exhibited.

Discussion.—Dr. Morris B. Bender: First, I want to say that extinction is based on the principle of sensory interaction. As for our own experiences, we worked with lesions in the parietal lobe. We made extensive studies on patients with lesions not only in the cerebrum, but in other parts of the nervous system as well. We would have liked to use your instrument, but it cost too much money. Instead we had to depend on weighted pins and the like to try to make controlled studies. We investigated patients with parietal lobe lesions, but we also investigated patients with defects as a result of lesions of the nervous system below the level of the cerebrum. Extinction was less frequent in lesions of the spinal cord, and in lesions of the spinal roots and peripheral nerves we found very few instances of this phenomenon. I wonder whether you tried your method in cases of lesions of the peripheral nervous system and whether or not you found extinction in such cases. My second question is whether you have taken into consideration the phenomenon of adaptation.

Dr. Morton Nathanson: I am not quite clear as to whether the authors are submitting pain threshold changes as an explanation of the phenomenon of extinction. If so, how does one explain extinction of touch stimuli?

Dr. Philip S. Bergman: What is the pain threshold on the unaffected side in comparison with normal subjects?

Dr. Joseph Moldaver: I would like to know whether the authors have done any study on the threshold of first and second pain sensation. I realize that this is a very difficult point, but at times one finds a dissociation between fast and slow pain; the threshold probably could be studied.

Dr. Berlin: We, too, have not found extinction clinically as prominent in peripheral nerve lesions as it is in cerebral lesions. In patients with peripheral nerve lesions at one particular period of testing their threshold is relatively fixed, whereas in patients with cerebral lesions the pain threshold did vary on the hypalgesic side. In response to the question of adaptation, we did observe that adaptation sometimes occurs, though noting, however, in repeated stimulation of the hypalgesic side the pain threshold tends to approach normal rather than to be elevated by this technique.

NEW YORK NEUROLOGICAL SOCIETY AND NEW YORK ACADEMY OF MEDICINE, SECTION ON NEUROLOGY AND PSYCHIATRY

Joint Meeting, January 12, 1954

Morris B. Bender, M.D., Secretary, Section on Neurology and Psychiatry, presiding.

The Use of Psychotherapy for Seriously Disturbed Patients. Dr. William K. McKnight (by invitation).

The application of various psychotherapeutic techniques in the treatment of patients who are seriously disturbed and most effectively treated in the hospital setting is presented and summarized from a study of clinical material representing a series of 20 cases under treatment at the New York Hospital, Westchester Division.

A comprehensive bibliography is referred to in evaluating various psychotherapeutic objectives and the continued need for further understanding of therapeutic goals is discussed. Emphasis is placed on the desirability of utilizing present knowledge of psychotherapeutic principles in a more widespread manner while further research is carried on and in utilizing such techniques to help patients to relate to reality situations with improved motivation and in increasingly effective ways through periods of

disturbed behavior. Careful diagnosis and dynamic study, the judicial use of group and cultural facilities within the hospital environment and the use of electroconvulsive treatment when indicated are related to individual psychotherapy which is based on the development of a flexible, individualized physician-patient relationship, utilizing suggestion, re-education, directive control, interpretation and support. Combined with appropriate physical and nursing care as well as with detailed analysis and gradual modification of contributory or complicating family attitudes a psychotherapeutic approach as described is found to enable the patient to gain maximum hospital benefit and to achieve through his hospitalization a meaningful and constructive experience leading to a more stable personality adjustment.

Discussion.—Dr. Robert B. McGraw: I should like to underline some of Dr. McKnight's remarks which struck me as significant and important. They are as follows: "In respect to the background the underlying maturity of the human personality must be gauged in the final analysis not solely in terms of freedom from crippling anxiety and fear, but by the achievement of a sense of personal and social values which is compatible with the basic biologic characteristics of the individual" Then further, "the methods by which the therapist through his personality applies the theories and projects of scientific research constitutes the art of medicine, and as such, becomes the definitive source of psychotherapy." "The combination of good physical care, nursing attention, and medical treatment with psychotherapy provides the best opportunity for clinical response."

In respect to the details of treatment which is a matter that many therapists find most difficult to record and relate to others, to their colleagues particularly, either by word of mouth or by written note, I think that Dr. McKnight has been able to relate these rather well to us here tonight. He says: . . . "This procedure provides the patient with an orientation of the therapist's scope of interest and creates a beginning frame of reference as to the significance of experience and personal values." I found myself in very general accord with the methods described, and again wish to congratulate Dr. McKnight.

Intensive Dynamic Psychotherapy of Depressions. Dr. Richard N. Kohl (by invitation) and Dr. Frederic F. Flach (by invitation).

During the past three years, investigators at the Payne Whitney Clinic of The New York Hospital have studied depressed patients with a generally poor prognosis and have found that they may respond favorably to intensive psychotherapy when carefully selected and treated under optimal circumstances. Some degree of success in the patient's preillness life adjustment and the full cooperation of his responsible relatives are considered to be important criteria of selection. Uninterrupted treatment within a hospital affords protection, planned activities, control of dynamically significant environmental factors and careful observation of psychopathologic changes. Electro-convulsive therapy may be used as an adjunct to psychotherapy for the purpose of eliminating those symptoms which seriously interfere with progress. The goal of treatment is not merely recovery from the immediate depression but is the prevention of future recurrences of the illness.

Since preventive traetment and deep analysis of manic-depressive reactions are generally considered to be of little or no value, a patient of this type was selected for treatment as outlined above: Various therapeutic techniques including free association and dream analysis were utilized in the investigation and analysis of his clinical elations and depressions. Treatment continued without interruption during exacerbations and remissions of his symptoms. When the patient recovered from his depression, intensive psychotherapy was directed specifically toward the modification of those personality features which he recognized as potential sources of future depressions.

Discussion.—Dr. S. Bernard Wortis: I cannot help but feel that many of my remarks will identify me as a B. C. (Before Convulsions) Therapist. The present-day tendency by some, of shocking people first, and sometimes finding what ails them later, is a sad commentary on our times. Equally sad is the individual who has been treated outside a hospital with such intensive psychotherapy that the patient injures himself, while the psychiatrist is concerned with the more microscopic dynamics of the illness. I speak of this feelingly because those of us on acute hospital services see such patients admitted. The authors of this paper speak of therapeutic results in terms of "prognosis for life" after adequate psychotherapy. We urgently need data regarding the long term effects of intensive treatment of such patients.

Another point comes to my mind; the authors say that the electroshock therapy may be used at the termination of intensive psychotherapy when the patient has gained adequate insight, but still faces a prolonged state of mild depressive convalescence. My question is why give electroshock therapy if the insight is adequate after intensive psychotherapy?

Dr. Oskar Diethelm: The treatment as carried out by Dr. Flach and superised by Dr. Kohl may at the present time be considered as research work. I agree with Dr. Wortis, when I look back on my own experience of cases published, and followed carefully, there are some cases I treated in 1929 with a moderate type of intensive psychotherapy who have remained in good health ever since. On the other hand, as most of you unfortunately know, every year we get a few reports of former patients who have terminated their lives in suicide. The longer you live, and the bigger practice you have, the more cases like this you get.

The next point involves a statement which always interested me which Freud mentioned in the introduction to his dream book, where he quoted Griesinger's third edition of his textbook (1871) stating that in dream and in psychosis, wish fulfillments and dynamic factors are clearly revealed. I felt we should

at least see whether we could not get some better understanding by aggressively analyzing patients when they suffer a great deal, at the period when we usually are taught not to push too much.

DR. RICHARD N. KOHL: It is true that the patient recovered from his depression, but those features of his personality which dynamically contributed to his illness persisted throughout that period of relative well-being. At the present time the goal of treatment is to alter these features sufficiently to prevent a recurrence of the illness.

SOPHOCLES CONTRA FREUD. A RE-ASSESSMENT OF THE OEDIPUS COMPLEX. DR. IAGO GALDSTON (by invitation).

The most distinguished and original element in the Freudian system is the Oedipus complex. Freud considered it his unique discovery. However, he misread the tragedy of "Oedipus Rex" and drew certain psychological lessons therefrom which are not there.

Freud based his elaborate deductions on only one of the three plays Sophocles whote on Oedipus. "Oedipus Rex", however, mirrors but a portion of the "crimes and punishment of the House of Labdacus." The incest of Oedipus was in effect the midpoint of the tragedy. It was consequent to the crimes of his parents.

In "Oedipus Rex", Freud saw what he took to be a universal phenomenon: the desire of the young child to have incestuous relations with his mother, and to destroy the father who stood in the way. On this assumption Freud built an intricate superstructure of involving the so-called castration fear, the resolution of the Oedipus complex, the flowering of the superego.

Patricide and incest are heinous crimes. But the burden of "Oedipus Rex" is the utmost depths of degradation to which the son may be reduced by the father unmindful of his moral obligations. The patricide and incest of Oedipus were not *his* crimes, but the dire consequences of the guilts of his parents.

There is nothing in "Oedipus Rex" to justify Freud's contention that the play expounds the universality of the infantile incest wish. It teaches another lesson, one that reflects on father rather than son, that has to do with moral fortitude, love, charity and mercy, rather than with sexuality and infantile incest longings.

Yet it was Freud who linked the Sophocleon tragedy with the dynamics of the child's psychic growth. The Oedipus myth embodies the concept of the paternal matrix within which the nascent personality of the child is nurtured. Where there is love between the parents which yet includes the child, the child will effectively meet the challenges of its maturation, and have reciprocal affection for the parent. But where the parents are immature and neurotic, the child might suffer. It is this simple, yet vital validity that lies at the core of the Oedipus myth and not the fancied incest wish of the child.

Discussion.—DR. GREGORY ZILBOORG: First of all, Dr. Galdston has done himself an immense injustice. He started extremely well, and proceeded from ancient tradition to that which has not been foreseen by Freud in the phychological sense, and this is the tradition that the sins of the fathers are visited upon the children. It is undoubtedly a point of immense importance, a point which psychoanalysis as it is presented today has not given proper clinical considerations.

I should like to ask Dr. Galdston when he sends his paper for publication to make one correction. He refers to incest as a derivative punishment. What he wishes to show was the derivative crime from which punishment was derived, because incest itself is not a punishment, but it becomes a punishable crime only insofar as it is objected to by the father.

DR. GALDSTON: I want to thank Dr. Zilboorg for his comments on my paper. What Dr. Zilboorg said deserves earnest consideration. One has to read Freud with an eye "agin" Freud. That is, one really must use a kind of interpretative screen. But I am sure Dr. Zilboorg is wrong if he thinks that Freud revised his ideas on the Oedipus Complex in any way whatsoever. I was very careful to draw the quotations I cited from the latest of Freud's published works, from the Outline which he published shortly before his death.

BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY

Meeting of February 18, 1954

Dr. Walter Wegner, President, Presiding.

CONDITIONING AND EMOTIONAL BEHAVIOR. HOWARD LIDDELL, PH.D., Cornell University

Pavlovian conditioning is always difficult for the animal because, through habituation, it becomes emotionally muscle bound and cannot fight back or flee from the emergency situation of the daily conditioning tests. Every positive or negative conditioned stimulus elicits in sheep or goat tense anticipation as to what is to happen next and this is one manifestation of emotional behavior. The animal is forced to anticipate whether the signal is to be followed by mild shock to the foreleg or no. This emergency preparation with its accompanying emotional behavior can be made still more stressful by imposing a rigid time schedule where 10 second signals are separated by equal intervals of time from

2 to 6 minutes. Such training procedures lead inevitably to chronic emotional disturbances (or experimental neurosis — to use Pavlov's misleading designation).

Approaching emotional breakdown is foretold by clearly distinguishable prodromal stages of behavior under continuing stress. Soldiers under combat conditions exhibit the homologues of these same prodromal indicators. However, the stresses of combat may be counter-balanced by indoctrination and effective leadership. The stresses of conditioning are counterbalanced in the lamb or kid 3 to 8 weeks of age by the presence of the mother. This "protective" influence is being experimentally analyzed.

The homologue of "psychic trauma" from solitary early conditioning can be demonstrated when "protected" and "unprotected" kids are subjected once again to the stress of conditioning when 2 years of age. The animals not "protected" by the mothers presence during youthful training succumb sooner than the "protected" animals.

Discussion.—DR. WALTER WEGNER: This has been a most interesting and stimulating discussion and I am sure it could have gone on a good deal longer. The problems that have been raised and sketched are numerous. These experiments have been going on since 1921 and so in the 33 years that have followed, Dr. Liddell has passed through the period of dominance of quite a variety of schools of psychology, quite a variety of explanations for what goes on. No doubt each school could interpret the things that happened in a different way, and tell us how they have come about.

DR. STANLEY COBB: If I were to express what these experiments meant to me, it would be a long lecture and the reason is that I have had an interest in the work of Professor Liddell for years. I have been fortunate to visit him on the farm and see these animals. If you went there you would think the behavior of the animals was more remarkable than the examples we have had on the screen. I am sure that my whole understanding of the experiments of Pavlov has been changed by watching Dr. Liddell's work. That is for all of us a fairly fundamental change. The main issue, as I see it is that he has observed the whole animal as an organism; he has observed a large number of factors in the environment, whereas Pavlov in his earlier work at least, throught that he was isolating the animal and was performing an experiment on the effect of stimulus and conditioning on an animal isolated from his environment. Dr. Liddell has shown us that the isolation itself was conditioning of the animal. I won't go into that because others here can speak on conditioned reflexes more authoritatively than I.

I would like to bring up some questions about the emotions. Psychiatrists, neurologists and moralists often are heard to say that it is *bad* to have emotions and that to have intellectual functions is *good*. If your emotions interfere with your intellectual functions, then the emotions are looked on as something inferior. That is a very usual attitude of mind. I would like Dr. Liddell to tell us what he thinks about the emotions from this moralistic point of view and tell us where the useful reaction of alertness stops and anxiety begins. Is there a line? I would say, even, that a little anxiety is probably useful to a speaker. I was told a number of years ago by Harvey Cushing, one of the best speakers I ever knew, that on entering an amphitheatre he always had palpitations, sweating, and tremor. I am skeptical about the idea that to have anxiety is pathological and that emotions are "bad."

DR. LIDDELL: In the words of my wife, one talented young lady said: "But what about joy?"

DR. WEGNER: The remarkable similarity of human beings to animals in the field of their emotional responses is apparent in this presentation. I wonder if Dr. Liddell may sometimes find himself philosophizing about their common origins, or something of that sort. Because of this remarkable similarity, it would seem that the treatment of neuroses in human beings must find an answer in a continuation of this work. Dr. Skinner's name has been mentioned, and I understand that some work he is doing is a partial answer to that problem.

DR. BURRHUS F. SKINNER: The comment "What about joy?" was one I wanted to raise myself. What we call "anxiety" is generated by the intermittent but fairly regular presentation of a noxious stimulus. It is one of the more important clinical emotions. The responses Dr. Liddell studies are pretty much unconditioned disturbances of behavior. They are not behaviors which he sets up in particular form. They are the "wringing of the hands" of the sheep. I am more interested in what noxious stimuli do in interfering with the regular business of the day. The anxious business man is possibly wringing his hands and pacing the floor, but he is also *not paying attention to business*. I am interested in knowing why he cannot pay attention to business, than with why he shows certain spontaneous manifestations of emotion. My own techniques try to show how an anxiety-producing stimulus suppresses stable behavior already in progress.

The really traumatic effects of emotion, as Freud exposed them, seem to be concerned not with the expression of emotion at all but with by-products of the attempt to conceal emotion. His first case, I believe, was that of a girl whose hysteria appeared to be due to an attempt not to show emotion at the bedside of her father. I should like to ask Dr. Liddell "Have you ever tried to control the expression of emotion in sheep and if so, what are the results of such control?"

DR. WILLIAM MALAMUD: It seems to me that this excellent presentation by Dr. Liddell warrants more discussion than has been raised so far. Personally, in my contacts with Dr. Liddell, I have been particularly interested in his ideas about the application of the work that he has done to the teaching of medical students. I remember a pleasant afternoon I spent on his farm discussing the possibilities of presenting to first-year medical students the results of his findings in the attempt to introduce the

study of human behavior through a psycho-biological approach as he presented it tonight. It is a difficult thing to do, and I felt that his ideas were most stimulating. I was wondering whether Dr. Liddell could tell us more of how one could use this approach in a course on human behavior in the first year of medicine. Would Dr. Liddell elaborate on such a plan?

DR. G. COLKET CANER: Was any attempt made to give these animals more security by petting them? I understand that in cases where emotional disturbances developed they lasted indefiinitely. Was that true of all animals?

DR. ROBERT S. SCHWAB: Are other systems involved in these animals? Do they get ulcers, lose their appetite, etc., besides having tachycardia and rapid breathing?

DR. WILFRED BLOOMBURG: I have two somewhat philosophical problems that bother me. One of these is in terms of the description of this approach as "phychobiological". Actually, if this approach were applied to human beings instead of to sheep, it would be described not as psychobiological, but as "behavioristic" in that it ignores not only the psychodynamic implications, but all the constitutional implications that have been lumped under the general group of "instincts." I wonder how this purely behavioristic approach correlates with the instinctive drives and with what in the human might be called the psychodynamic interpretations.

The second point: This was touched on by Dr. Cobb's opening discussion, but I feel the need to amplify it. This is the matter of what appears to me to be the insertion of value-judgments. Dr. Liddell says that "one kid is protected, and another deprived," and he further describes an alertness which becomes a disturbed alertness. It seems to me that it is a value-judgment to say that the "protected" kid, which moved freely around the room, was acting more "normally" than the unprotected "deprived" kid, which clung to one wall. It may be that for a normal sheep, or kid, not subjected to electric shock that moving freely around the room is a more normal behavior, but it may also be that for a kid subjected to electric shocks keeping to one wall is a more adaptive and therefore more suitable behavior than to wander around the room. It disturbs me to see incorporated in these conclusions, therefore, what I consider value-judgments by characterizing certain behavior without justification as "better" or "worse." I wonder if Dr. Liddell would amplify some of these things in terms of interpretation. I think we should either be completely behaviorists or should explain our value-judgments more clearly.

DR. JOSEPH M. FOLEY: Professor Liddell's terminology and liberal use of analogies appears to beg the question of the relationship of experimental neurosis in animals to emotional disorders in man. Therefore, I should like to ask if Professor Liddell would define what he means by emotion?

DR. WEGNER: I should like Dr. Liddell to define neurosis also.

DR. LIDDELL: The philosophical problems that bother Dr. Bloomberg and Dr. Foley cannot be disposed of categorically. They are problems as bothersome to the investigators of animal behavior as to the clinician. I do not believe that we have made a liberal use of analogies and thus begged the question of the relationship of experimental neurosis in animals to emotional disorders in man. The emotionally disturbed sheep is not "anxious" and does not suffer from "insomnia" in the clinical sense. It does, however, if one examines its behavior in barn and pasture exhibit the *homologues* of anxiety and insomnia. The zoological principle of homology need not be lifted to structures such as the sheep's foreleg and the human hand and arm. The ethologists Lorenz and Tinbergen as well as ourselves believe that there are homologous behaviors as well as structures. It is these homologous behaviors in sheep and man that we are seeking to decipher in order to disclose the animal origins of Freudian psychodynamics. Pavlov was guilty of employing analogy in his use of the term experimental neurosis. There is no need to say more than that the animals following difficult and prolonged conditioning exhibit chronic states of emotionally disturbed behavior. If dogs enter the pasture and a "neurotic" sheep runs in one direction and the rest of the flock in another the dogs may kill this sheep. Its behavior in this crisis is emotional and its normal relations with the flock are disturbed. We have discovered in such sheep that these relations with the flock are chronically disturbed.

In our studies of animal behavior we employ value judgments in precisely the sense that clinicians employ them. For example, we say that a "good" goat mother "protects" her kid from the dangerous stress of conditioning by her presence during the test hour. Each value judgment is based upon surmise or intuition as to the outcome when not so "protected" in terms of the kid's subsequent growth and development, i.e. its survival. The value judgments invoked here raise specific problems for experimental analysis. What is a good mother? How in detail, does she protect her kid by her presence during stressful training? These questions we are presently attempting to answer by experiment.

We have been unable to reassure our sheep and goat subjects by our presence during training. On the other hand, petting and reassurance are efficacious in the case of the dog as shown by W. Horsley Gantt. Typically, the emotional disturbances of our animals last for life.

As for organ dysfunction in the disturbed animals other than heart and lung we typically observe excessive micturition and defecation during the laboratory tests.

In reply to Dr. Malamud, during the past ten years we have demonstrated our animals to medical students. By listing on the blackboard the animal's repertory of conditioned stimuli, positive and negative, we bring our "patient" before the class for presentation. The students may then ask the patient questions by instructing the demonstrator as to which conditioned stimuli they wish the animal to respond

to. Within the hour most medical students begin to see the animal's presenting behavior as a product of its past laboratory training. The impact of two or three such case presentations of an animal in the place of a patient will suffice to sensitize the student's powers of observation with respect to these simple episodes of behavior. It is unnecessary and undesirable to burden the medical student with another textbook and another course of lectures in order to achieve our modest educational objective.

I fully agree with Dr. Cobb in his skepticism concerning the usefulness of moralizing about emotion. In our opinion there is no such thing as unadulterated thinking or unadulterated emotion.

BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY

Meeting of January 21, 1954

Dr. Raymond D. Adams, President, Presiding.

On the Classification of the Myopathies. John N. Walton, M.D., M.R.C.P.

In a study of natural history and inheritance of a series of 136 cases of myopathy, the cases were first divided into two broad groups, the primary myopathies or muscular dystrophies and the myotonic syndrome. If the rare distal, congenital, local and ocular types are excluded, the muscular dystrophies are seen to consist of three clinically and genetically distinctive types. Type I, the Duchenne or pseudohypertrophic type is characterised by: a) expression almost invariably in males; b) onset usually in the first three years of life but occasionally much later; c) transmission as a sex-linked recessive character with a high mutation rate, d) symmetrical involvement of pelvic girdle muscles and later of shoulder girdle; e) frequent pseudohypertrophy of calves; f) steady and rapid progression generally leading to death in the second decade but sometimes not until middle life. Type II, the facioscapulohumeral form is distinguished by; a) expression in either sex; b) onset at any age; c) transmission usually via an autosmomal dominant gene; d) the occurrence of abortive cases; e) involvement first of facial and scapulohumeral muscles; f) muscular pseudohypertrophy is rare; g) slow progression with long periods of arrest and survival often to a normal age. Type III. the limb-girdle form, is characterised by; a) expression in either sec; b) onset usually in the second or third decade but sometimes in middle life; c) transmission usually via an autosomal recessive character; d) initial involvement of either shoulder or pelvic girdle muscles, with occasional pseudohypertrophy; e) the rate of progression is variable, but severe disability and death are frequent in middle age.

It is agreed that myotonia congenita, paramyotonia, and dystrophia myotonica are distinctive clinically, but much evidence suggests that the three conditions are but variations of a single disease process which may be called the myotonic syndrome.

Discussion.—Dr. D. Denny-Brown: This is a most stimulating study, especially in regard to the family history, and pedigrees that Dr. Walton has collected. It is remarkable how consistent the type of inheritance of each type of muscular dystrophy turns out to be—much more consistent than any one of the commonly accepted clinical criteria.

Unhappily the pedigree is not always available in the Clinic, and the patient without family history may be a mutant of a dominant, or the only evidence of a recessive gene. Clinical criteria therefore still have their value.

Dr. James B. Ayer: Is there anything in the cases that were cross hatched and that ran an atypical course? Is there anything that gives you an idea of what made them stop? I was disappointed that you did not differentiate a little on anatomical and pathological findings. Do I understand that they all show similar muscle disturbance pathologically, or some of them show a different picture associated with the muscle degeneration? We are all interested in treatment that has been suggested from California. Has Van Meter's treatment been tried? Wartenburg said he had seen definite improvement, which rather surprised me.

Dr. Welton: Although all the pedigrees of the Duchenne type which I showed tonight revealed a clearly defined sex-linked inheritance, in addition we had many isolated cases of classical pseudo hypertropic cases, single ones in a family. This gene has a very high mutation rate. It can arise anew in a family by mutation and produce a large number of single cases.

About myotonia in dystrophia myotonica; it is usually seen in the hands, forearms and muscles of the tongue. However, I have had cases in which it was generalized, and others where it could be demonstrated only with the electromyogram.

The pathological changes in muscles are very similar indeed in all types of muscular dystrophy. It is important, however, to distinguish the findings in those so-called menopausal muscular dystrophies, who are suffering from polymyositis.

We tried five forms of treatment: synthetic x-tocopherol, mixed natural tocopherol, wheat germ oil, nicotinic acid, and a control. I assessed the results, but was not aware which case had received which treatment. Treatment was continued for six months. At the end of this period. I discovered subjective impovement in two or three cases in every group. I could not find objective improvement in any. Just as much subjective improvement occurred

in the controls as in the patients receiving supposedly effective forms of treatment. There are continually papers appearing like Dr. Van Meter's in which the cases and results are poorly documented. All of the things in Van Meter's cocktail have been given before without effect. For the present, I would say there is no evidence that there is any effective therapy for muscular dystrophy.

THE DIFFERENTIATION OF THE VARIOUS AFFERENT SYSTEMS IN THE BRAIN BY ANESTHESIA. MARY A. B. BRAZIER, PH.D.

In recent years in many widely scattered laboratories electro-physiological evidence has been mounting for the existence of some pathways in the brain that have not yet been traced by the anatomist.

For some years our work with human subjects has presented certain paradoxes. A very generally accepted theory of sleep, and also of anethesia, was that in such states of impaired consciousness, impulses were being prevented from reaching the cortex. Yet the Davises showed in 1938 that there is an electrical response at the cortex during sleep to a stimulus too weak to wake the sleeper. A similar response in anethesia was demonstrated at this meeting by slides of subjects under pentothal anesthesia, and under scopolamine and morphine with stimulation by both sound and light. It was demonstrated that whatever the sense modality stimulated the response was not at the specific receiving cortex but in the premotor region (apparently area 6). There was no observable behavioral response on the part of the patient.

A review was given of the evidence for Forbes' secondary response to a single sciatic stimulus which follows about 70 msec. after the rapidly conducted primary and appears diffusely in both hemispheres. Slides were shown of a similar phenomenon in the visual system and in the auditory system.

A review was also given of the work from Magoun's laboratory of the responses that travel by the ascending reticular system to the cortex, losing on their way their specificity for the sense modality initiating them. It was argued that these are not identical with Forbes' response since their latency, although longer than that of the primary, was not nearly as long as that of the Forbes' response.

It was demonstrated by slides that three responses with discretely different latencies can be evoked in the visual system from a single flash and from the auditory system by a single click, by a careful manipulation of anesthetic level. The second of the three had a latency in the range found by Magoun for the pathway through the reticular system. Barbiturate anethesia at a level that can be defined approximately in operational terms will reveal all three responses. Additional anesthesia in specified moderation has the following differential effects:

1) the primary response is unchanged
2) the response presumably carried by the ascending reticular system is lost.
3) the long-latency response of Forbes is augmented.

Possible hypotheses were discussed. It would appear that the ascending reticular system needs to be active for the brain to handle (and the subject to be conscious of) the sense-specific signals coming in over the primary system.

Discussion.—DR. HUDSON HOAGLAND: This is a very interesting paper and I would like to congratulate Dr. Brazier on the significance of her contribution. There is something that puzzles me. Of the three responses the primary cortical response involves the smallest number of synapses, probably only three, and is little affected by anesthesia. The Forbes response with its long latency and other properties presumably involves many more synapses. Yet this response actually increases with depth of anesthesia. In general we think of anesthesia as knocking out synaptic conduction and might therefore expect to see the Forbes response markedly inhibited.

DR. JEROME K. MERLIS: In the literature one sees descriptions on many different electrical responses to afferent stimulation, e.g., recruiting, secondary, irradiating, diffuse, repetetive, augmenting, K complex, etc. The conditions of the experiments vary considerably, and it becomes more and more difficult to determine which responses are being described under different names. Does Dr. Brazier believe that the brief latency responses she has described correspond with any of the responses previously described under another name?

DR. RAYMOND D. ADAMS: The implications for clinical neurology are far reaching. In states like sleep where we have assumed that the activity of the cortex is in abeyance, it is clear now that it is responsive. It would suggest that suppression of consciousness in the form of sleep or anesthesia is a suppression of certain sensory systems and not others. This is a very significant step forward in an attempt which I am sure Dr. Brazier will continue, in relation to the different clinical states we see in anesthesia and sleep. Do analgesic drugs have different effects on this triple sensory response than the soporific drugs? You have in your hands a means of studying the effect of a number of different agents on the nervous system.

DR. JOSEPH J. FOLEY: Does Dr. Brazier think the Forbes response is extra-laminscal as well?

DR. BRAZIER: In response to Dr. Hoagland: There is some evidence, mostly from the work of Magoun's group that the brain stem acts as a balanced inhibitory and activating system. My hypothesis which I have been trying to test is that at this level of barbiturate, the inhibitory system of the brain stem is depressed before the activating one. There is some evidence from other laboratories that might tie in with that, i.e. from the work of Dr. Kerr in Los Angeles, and Dr. Lindblom at the Karolinska Institute in Stockholm. People have been familiar with inhibiting action descending from the brainstem. These two workers have brought out evidence of inhibition on ascending impulses.

In reply to Dr. Merlis, I think it unlikely that the second response of brief latency that follows the primary can be related to any of the repetitive

phenomena you mention since Magoun has shown it to have a very long recovery time.

In reply to Dr. Adams, I have no experience with analgesics other than morphine. I agree it is a fruitful field to work in. I might mention that one does not get these responses in ether anesthesia.

In reply to Dr. Foley's question, about Dr. Forbes' secondary response: Morison and Dempsey concluded that there was a thalamic and extra-thalamic route. They demonstrated two levels at which impulses cross: at the level of the superior colliculus and in the anterior third of the corpus callosum.

EPILEPSY AS A SEQUEL TO CEREBRAL VASCULAR DISEASE. A CLINICO-PATHOLOGICAL STUDY. PHILIP R. DODGE, M.D., EDWARD P. RICHARDSON, JR., M.D. and MAURICE VICTOR, M.D.

Despite voluminous literature concerning both epilepsy and cerebral vascular disease, relatively few well documented cases are recorded in which epilepsy has appeared as a result from cerebral vascular lesions, and it is often thought that epilepsy is very rarely seen as a complication of such lesions. We should like to call attention to an important and often overlooked cause of recurrent seizures in adult life.

In a clinico-pathological study of 6 cases of recurrent seizures with cerebral vascular lesions, ranging in age from 46 to 75 (average 59) years, seizures were the most striking neurological manifestation in 4 and were the only evidence of cerebral disease in 2; in 2, there was serious neurological deficit along with the seizures. The seizures were focal, or had focal aspects, in all, but 4 patients had generalized attacks as well. Although a 4 and ½ year remission of attacks occurred in 1, seizures continued at variable intervals for the rest of the patients' lives in the remainder. Pathologically, all had old infarction of the cerebral cortex, in the Sylvian and Rolandic regions. The infarcts were embolic in 5, and secondary to thrombosis of an internal carotid artery in 1.

The frequency of epilepsy with vascular lesions, in a survey of a year's autopsy material was found to be 5.8 percent (6 cases) of 104 cases of grossly visible cerebral infarction or hemorrhage, as compared with 1.3 percent (1 case) of 74 cases of cerebral athero-sclerosis of similar mean age, without such lesions. With exclusion of recent lesions, epilepsy occurred in 6 of 22 cases of old cortical infarction, and in no case in which the cortex was not involved. The importance of this form of epilepsy is emphasized in order that hazardous diagnostic procedures be not undertaken in this group without careful study and consideration.

Discussion.—DR. RAYMOND D. ADAMS: I have watched Dr. Richardson, Dr. Victor and Dr. Dodge collecting this data and have discussed their findings from time to time. Their study has been instructive to me. Vascular diseases seldom are the cause of recurrent seizures. When such a case presents itself, one should consider tumor, trauma and only by exclusion made a diagnosis of vascular disease. This work throws this teaching into serious question. It seems to me that one is forced to accept this notion that if vascular disease does involve the cerebral cortex, it is as likely to cause seizures as a traumatic lesion. I do not suppose Dr. Richardson would like to have us conclude that every case of seizures in an older age group represents vascular disease, but he and his co-workers have evidence to show that vascular disease is as important a cause as tumor, and probably in the late age group more important. Why was embolism so high in the causation of this type of syndrome? The answer is that embolism is more likely to cause cortical lesions than thrombosis, although with carotid artery thrombosis, there may occasionally be multiple scattered foci of cortical infarction.

DR. JAMES C. WHITE: I was delighted to hear Dr. Richardson give this paper. I do not think any neurosurgeon who has written about epilepsy has given consideration to the fact that it may be due to cerebral vascular accidents. When a man in middle life develops epilepsy without history of previous cerebral trauma or infection, the burden of proof is to show that he does not have a brain tumor. This is naturally the neurosurgeon's first thought. It is very valuable to us to have it pointed out that seizures may also arise as sequelae to vascular accidents.

DR. A. POPE: Could the marginal zone of cortex at the border of the infarcted area be differentiated histologically in the cases which developed seizures as compared with those which did not? Was there any pathological evidence in the epileptogenic lesions for a progressive destructive process of the sort described by Dr. Penfield in menigo-cerebral scars?

DR. RANDOLPH K. BYERS: In our follow-up study of children with cerebral palsy we have been struck by the frequency of convulsions in children with hemiplegias. These have occurred in both apparently the congenital group and the acquired group of hemiplegias. In the children with acquired hemiplegias, since we have been doing arteriograms, we find a fairly large percentage had vascular occlusion the middle cerebral artery being involved in some of its branches in most of them. Of these children many went years before having convulsions. Others had convulsions for a period and stopped spontaneously. One thing is, however, striking. If the children with convulsions are separated from those without, intellectual development of the children with convulsions is poorer than that of the other group. Whether this means that a more widespread lesion of the brain has occurred in those who develop convulsions and whether this interferes with intellect, or whether the convulsions themselves interferes with intellectual development, we don't know.

DR. ROBERT S. SCHWAB: Was there any relationship between seizures and presence or absence of hypertension? Were there any cases with the lesions in the occipital lobe or frontal pole?

DR. HAROLD W. WILLIAMS: I agree epilepsy may be a sequel to cerebro-vascular disease. I would

like to spread out the concept "Epilepsy as a Sequel", to the concept of recurring patterned episodes. I think of this 82 year old who has had some 8 recurring episodes of one half hour duration of aphasia and right handed weakness. In another instance, Dr. Hamlin's case, there were episodes of Meniere's Syndrome, recurring over a period of 14 years. Autopsy showed bilateral occlusion of the posterior inferior cerebellar artery. The histology did not give the understanding, how a lesion, essentially static from the point of view of neuropathology, can give rise to recurring episodes.

DR. D. DENNY-BROWN: I would like to ask whether Dr. Richardson feels that the hemorrhagic infarct has an epileptogenic influence, particularly in view of the fact that the extravasation of blood in some of these cases seems more than might be expected from arterial thrombosis.

DR. BERTRAM SELVERSTONE: Has Dr. Richardson found, especially in the smaller lesions, any noticeable enlargement of the ventricle on the side of the lesion?

DR. RICHARDSON: Dr. Pope asked about the marginal area at the border of the infarct. We see abnormality in that immediate vicinity—the nerve cells are thinned out there—but we were not able to detect any differences in the pathological appearance of that region in the lesions associated with epilepsy as compared with other cases of infarction without seizures. We found nothing we could interpret as a continuing or progressive lesion. The cellular appearance was characteristic of a quiescent lesion in which all activity had subsided.

In connection with Dr. Byers' remark about children with cerebral lesions and epilepsy: in our cases, several of the patients remained normal mentally. In this group in the later adult years, we think that the effect on intellect has chiefly to do with the size and location of the original lesion.

To answer Dr. Schwab: Hypertension was not a significant factor in the group with seizures, but we arbitrarily excluded "hypertensive encephalopathy" from our series because we think that it presents a special problem in cerebral vascular disease that should be considered separately from the lesions we have been discussing. In one case of recurrent seizures in the large series, the grossly visible infarction was in an occipital lobe, but there were in addition multiple microscopic infarcts in other areas of the cortex.

Dr. Denny-Brown asked about the possibility of greater epileptogenic properties of hemorrhagic infarction as opposed to ischemic. It is difficult to answer that exactly, because several of the cortical infarcts we observed were ischemic, and others were hemorrhagic. We have not at present sufficient data to answer this question with assurance.

As to whether the small cortical infarcts in the case of carotid artery occlusion could have been embolic—it must be conceded that they may have resulted from the detachment of portions of the thrombus in the carotid artery. We cannot be certain about this point.

Dr. Selverstone, we had a pneumoencephalogram on only one case, and that patient died, apparently as a result of the procedure. Nothing abnormal could be detected in the films. The original cortical infarcts were so small that there was no significant ventricular enlargement.

NEW YORK NEUROLOGICAL SOCIETY AND NEW YORK ACADEMY OF MEDICINE, SECTION ON NEUROLOGY AND PSYCHIATRY

Joint Meeting, February 9, 1954

Richard M. Brickner, M.D., President, New York Neurological Society, Presiding.

THE ROLE OF THE PUDENDAL NERVE IN NEUROGENIC BLADDER DISTURBANCES. DR. ANDOR A. WEISS (by invitation).

Pudendal nerve blocks and neurectomies have been used in neurogenic bladders in an attempt to restore the balance between the forces of expulsion and retention.

In 1939 Huggins, Walker and Noonan obtained good results in 5 out of 7 tabetics when they combined pudendal neurectomy with presacral neurectomy or transurethral resection. Emett, Daut and Dunn in 1946 failed to restore balance in a traumatic cord bladder. A pudendal nerve section was unsuccessful, after repeated transurethral resections of the bladder neck. Nesbit was successful in one case of traumatic cord bladder in 1948.

A situation analogous to biliary dyskinesia is found in some patients after recovery from spinal shock. The detrusor contractions are not accompanied by relaxation of the sphincters. The patients are unable to void and there are severe autonomic manifestations. This condition was studied at the Bronx VA Paraplegic Center with electromyography and at the Long Beach, California VA Center by cystoscopy before and after pudendal nerve block and neurectomy. With effective nerve block the marked electrical activity of the pelvic floor subsided entirely, and the patient voided with a good stream.

In some cases repeated pudendal nerve blocks sufficed to restore balance, but where the results were good but temporary, bilateral pudendal neurectomies were performed.

Two quadriplegics with bilateral pudendal neurectomies failed to show the good results obtained at the time of pudendal blocks. In Bors' series of 15 cases he obtained good results in 14 paraplegics and one failure in a quadriplegic. Following bilateral pudendal neurectomy the bladder becomes responsive to external pressure. The failure to obtain good results in the quadriplegics may have been due to their inability to apply Crede.

Discussion.—DR. ARTHUR S. ABRAMSON (by invitation): When we started working on the problem of the neurogenic bladder, it was felt that the activity of the striate muscle in the pelvic floor was very important. We had a useful tool to observe it directly, in electromyography. The insertion of the coaxial needle electrode into the levators is simple. We were particularly interested in the problem of balance (reciprocal action) between the expulsive force and the force of retention. In the spastic, the levators probably reflect the activity of the entire striate musculature of the pelvic floor, including the external sphincter. In the normal, it was noted that the pelvic floor relaxed prior to detrusor contraction. In the spastic, we found that as the bladder fills there was a gradual increase in electric activity in the pelvic floor, even though the cystometric curve did not rise. The increase in activity became marked as soon as the cystometric curve began to rise. The activity persisted as long as the cystometric curve rose, and as long as filling of the bladder continued. When the addition of fluid was stopped, there was a tendency for the activity of the pelvic floor to die down. This condition is different than that found in the normal where the pelvic floor is electrically silent when the detrusor muscle is contracting. When the pudendal nerve was blocked on one side, the activity on that side was greatly reduced. When the pudendal nerve was blocked bilaterally, there was a great deal less electric activity of the pelvic floor and sometimes the muscle was completely silent. At this point the patient was asked to void. These studies were done in patients who were previously incapable of voiding and required continuous catheterization. The patient was able to void but not in a continuous stream. Voiding had to be reinforced by pressure upon the bladder above the symphysis. We consider this an adequate method of voiding.

DR. THOMAS I. HOEN: I would like to know whether you have come to any conclusion in regard to the differences in interrupting the pudendal nerve and sectioning the anterior roots of the sacral nerves. In the first instance both sensory and motor components are interrupted, in the latter the sensory is spared. In other wards, is the relaxation of the external sphinchter due to the interruption of the anterior motor roots supplying it or to the abolition of the reflex arc? In the work we did we felt interruption of the roots was enough to give relaxation of the external sphincter. I think some differentiation might be made between anterior root section and interrupting the pudendal nerve.

DR. ABRAMSON: We directed our attention to the sensory component of the pudendal nerve; that was our hypothesis. We felt that this was very similar to the effect which is developed by section of the obturator nerve. If the adductor is denervated, there is an overall reduction in spasticity, even in muscles which were not denervated. Our interest was in trying to maintain the power of the expulsive force of the detrusor, at the same time trying to reduce the forces of retention. That would mean a better balanced bladder than that obtained by doing root section. The rhizotomy would mean that a much weaker expulsive force would be produced at the same time as the forces of retention were being reduced.

DR. WEISS: I think Dr. Abramson has summarized our attitude very well. We are well aware of your work, Dr. Hoen. We did use sacral denervation. We used both anterior and posterior rhizotomy from S_2 through S_5, but, as Dr. Abramson pointed out, our chief interest was trying to eliminate the forces of retention without weakening the detrusor. We did sphincterometric readings. In all of these cases we got readings much above the normal of 20 to 40 mm. of Hg. We have had some experience with sacral rhizotomy in patients who exhibited severe autonomic phenomena. Not only was there clinical relief, but after the sacral rhizotomy we were unable to induce hypertension and other phenomena by distending the bladder or stretching the anal sphincter.

THE "POST-CONCUSSION SYNDROME" IN COMPENSATION AND LITIGATION: AN ANALYSIS OF 95 CASES WITH EEG CORRELATIONS. DR. PETER G. DENKER AND DR. GERALD F. PERRY (by invitation).

Ninety-five cases of "post-concussion syndrome" involved in litigation for compensation were consecutively reviewed. Clinical opinions were attempted as to degrees of organic versus functional components in these cases, and a correlation attempted with the aid of electroencephalography in all these cases.

Definite abnormalities were found in 55 per cent, and borderline readings in 3 per cent of this series, despite the absence of positive neurologic findings on examination.

The types of brain wave abnormalities found are listed, the most common being focal slow waves, although amplitude asymmetries were also of great significance. Fast activity is rarely seen.

Similar changes were found in recent head injuries of less than three months duration as compared with older cases, where the head injury had occurred one to two years previously.

In approximately 80 per cent of the cases the clinical impression was confirmed by the electroencephalogram findings. In the other 20 per cent such clinical impression was at variance with that of the electroencephalogram findings.

No correlation could be determined between loss

of consciousness and abnormal electroencephalogram findings.

Discussion.—Dr. Samuel Brock: Drs. Denker and Perry have added another noteworthy paper to a distinguished list in which attempts have been made to analyse the post-concussion syndrome. They cite the well-known fact that from 15 to 30 per cent of individuals have persistent headache, dizziness and personality changes for a variable period following relatively slight head injury. They point out that litigational and/or compensation factors have helped to make this a puzzling and highly complicated problem. The ideal set-up for studying this problem would be 1) a *pre-traumatic* study of a large group of workers in an industry in which head injury is common: this should include not only the usual neurologic examinations but also a study of the personality profile and interpersonal relationships, etc., as well as electroencephalography; 2) the establishment of a brain injury center to which such injured individuals could be sent so that they could be studied with some degree of uniformity, and of great importance 3) a follow-up study covering a number of years, depending upon the duration of the symptoms.

Dr. Hans Strauss: In my own similar material of 250 cases, the percentage of electroencephalographic abnormality is exactly 20 per cent. This percentage is only 10 per cent in patients without disturbances of consciousness. In those with such disturbances, the percentage is higher when the unconsciousness lasted more than one hour. Statistics do not help us much in this type of work, except that we should be aware of what really constitutes an abnormal EEG. The difference in these criteria must account for our different results.

Dr. A. Davidson: On the Neurological Service with which I am associated we make great use of an ancillary factor, and that is psychologic tests, the Wechsler memory scale, the Bellevue-Wechsler (digit symbol, block design and similarities) and the Bender visual motor gestalt test. In a paper in The American Journal of Psychiatry not so long ago in which the EEG and psychologic tests were compared, it was found that psychologic tests were much more sensitive in picking up brain damage, and that is something we all ought to remember. I was surprised to hear of a series as long as this without some effort being made to do some psychologic tests. It has been my experience that we pick up organic brain damage with these long before we pick it up with electroencephalography.

Dr. Carlos G. deGutierrez-Mahoney: I think this is a very important problem. This gives me an opportunity to plead for recongition of, or at least an open mind to, the work that has been done regarding the pathology of concussion. To say we know nothing about its pathology or pathologic physiology is not quite true. If you will go back to the work of Jacob in 1913, you know that histologic changes have been found in concussion, also supported in more recent times by Windle's work. My own studies have also shown there are changes in the neuron, in the cell body itself, in the axis cylinder, and in the myelin sheath. I think when we deny these observations categorically, just because someone has said concussion is a state where one cannot find cerebral changes, that we are not opening our minds to the whole picture. If we add this to what we know from psychologic studies and to what we are learning from electroencephalography, we are going to have a more sound understanding of what has appeared to be a nebulous matter.

Dr. Irving J. Sands: I was delighted to listen to the presentation of the paper and to the discussion that followed. It dealt with a subject of great importance to all who do neuro-psychiatry, especially to those who occasionally have to discharge medical legal obligations. Electroencephalography has proven a valuable addition to the diagnostic armamentorium of the neuropsychiatrist. However, it has many limitations and it is not an infallible instrument. Since it has been recognized that an electroencephalogram may be perfectly normal even in the presence of established brain injuries, its value is diminished. In fact, it makes one hesitant to use it as a specific diagnostic test.

Dr. Israel Strauss: I was very much interested in this discussion. An electrocardiogram of a heart may be absolutely negative, and the patient may die from cardiac disease. It is also true that occasionally an electrocardiogram will show pathologic changes in the heart that are not clinically diagnosable, so we have both sides of it, just as you have with the brain in electroencephalography, and that has been brought out, I think, by what Dr. Hans Strauss said tonight. I now go back to 1934, when a paper was read and published by Nathan Savitsky and myself on what was known regarding the pathology of concussion. You will find quite a rèsumé from the time of Hippocrates up to the day we wrote that paper historically, showing all the views of the pathologists and so on in concussion.

Dr. Lewis D. Stevenson: In any group of 100 patients selected like this quite a large number of them will have received no brain injury, no injury of any kind, and I wonder if it is an assumption on Dr. Denker's part that all of these patients actually had concussion. It seems to me we have to have some clinical criteria for determining whether a man was injured or not, and that was something that was not mentioned. I believe in any such group quite a percentage would be straight out-and-out malingerers, although that point was not brought out here.

Dr. Richard M. Brickner: Fulton during the war observed that British railroad workers whose heads were caught between round disks on the ends of railroad trains showed no loss of consciousness, even though the head was terribly battered.

Dr. Denker: In reply to the last remark of Dr. Brickner, I think it is well recognized that if a person's head is stationary at the time of the injury to his head, he is less likely to suffer from post-concussion symptoms. This brings up the question as to the etiology of the post-concussion syndrome

from a physiologic standpoint, as apart from the pathologic brain changes produced. You all know in this respect of the theory of Dr. Denny-Brown, who believes from his studies that there must be an acceleration factor, the brain being thrust forward within the skull at the time of injury. If the head is kept stationary this acceleration is not produced, so that post-concussion symptoms do not result.

I did not state, nor even imply, that the electroencephalogram should be *the* criterion of assessing importance of brain damage, or in ruling out neurosis or malingering. As in other conditions of medicine, I do however feel that it is a very helpful laboratory aid which has to be considered in the total picture of evaluation.

DR. PERRY: On the question of interpretation of abnormal records there is considerable variation in different schools. Dr. Strauss mentioned that he did not think any records should be regarded as abnormal which had a frequency greater than 13 and a voltage over 30 microvolts. The Gibbs' and other schools call it abnormal. Similarly, the amplitude asymmetry, present in two cases, was marked and is clearly defined as abnormal by most schools of interpretation. I know Dr. Strauss is conservative in the interpretation of spikes, but we tried to encompass all views in the reading of our records. Besides, the spike activity seen in some of our cases is a part of the total abnormality present. Our cases did not give a history of epilepsy nor of definite epileptic seizures.

PERIPHERAL NERVE PRESSURE SYNDROME WITH CONDUCTION BLOCK. DR. JOSEPH MOLDAVER.

In cases with tourniquet paralysis there is a disturbance in the functions of the peripheral nerves which is due to the mechanical pressure on the nerves and is not the result of ischemia. The characteristics of this syndrome are the following: The electrical studies show a typical block of conduction characterized by the lack of response to stimulation of the motor nerve above the injury and a good response below the injury. The conduction block is very well defined in tourniquet paralysis: by moving the stimulating electrode slightly above or below the injury there is no response or there is a good response to stimulation of the nerve. In addition, there is no tingling sensation when the sensory fibers are stimulated below the injury but just above it the tingling elicited by electrical stimulation is felt and referred to the sensory distribution of the limb. Those patients may show complete paralysis and might sometimes be taken for conversion hysteria because of the supposedly normal sensory findings. There is a dissociation of the sensations. Pain sensation is never lost, there is often an actual hyperalgesia, that is to say, a low threshold for pain. The fibers subserving touch, pressure, vibration and position sense are affected and often lost. Heat and cold are seldom impaired. The sympathetic fibers are not affected. Pilomotor reflexes are normal. Skin resistance also is normal and the temperature of the skin is normal too.

In some cases with peripheral nerve pressure the findings can be the same. In cases with block of conduction affecting the motor fibers and resulting in a dissociation of the sensations there is no paresthesia or spontaneous tingling. The fibers responsible for the tingling sensation show therefore also a block of conduction.

Discussion.—DR. THOMAS I. HOEN: Having seen this work done, how thorough it has been, you must not be misled into thinking this is not a really important contribution. This paper, being very objective and precise in its presentation, does not leave much room for controversial comment. It is quite possible that the impression that Dr. Moldaver gave you that the loss of conductivity in the nerve was due to compression of the axone might not be true. We cannot biopsy a nerve to see what it looks like, but we have seen cases where axones are compressed to 10 per cent of their normal volume with normal conductivity. In these patients there is an absolute paralysis, which Dr. Moldaver has shown you, and he has hypothesized that it is due to the reduction in volume of the axones. I am inclined to think the lesion may not be of the axones, but of the myelin; I think it may produce a breakdown in myelin which may prevent passage of the impulse because of failure of insulation.

DR. RICHARD M. BRICKNER: Can Dr. Moldaver in any way relate this to spinal cord injuries which recover themselves?

DR. I. M. TARLOV: Dr. Moldaver has presented evidence that mechanical deformation rather than ischemia causes compression paralysis of a peripheral nerve in which there is apt to be preserved pin-prick appreciation in the presence of motor paralysis and absent position sense and vibration. I would like to cite a case that proves that ischemia may produce the same type of syndrome. My patient was injured in an automobile accident. She had complete paralysis of her right upper limb, absent position sense and vibration, but she could feel pin-prick applied to the limb. There were absent radial and brachial artery pulsations on the paralyzed side, the syndrome having been caused by thrombosis of the subclavian artery. We may say then that ischemia may produce the same type of syndrome that Dr. Moldaver has described. One may occasionally find the same type of syndrome with spinal cord compression. Hence one sees patients with the primary lateral sclerosis syndrome, or the posterolateral syndrome caused by spinal tumors.

DR. MOLDAVER: I think that in some cases the damage to the peripheral nerve can affect myelin sheaths or sometimes the axones, but in other instances the lesions to the peripheral nerves can be very minimal or can be sub-microscopic ones as in certain cases the return of function is rather fast.

Ischemia cannot explain the conduction block that we see in cases with tourniquet paralysis or with pressure paralysis. It is obvious that if a tourniquet has been applied, the limb would be ischemic from the tourniquet down and yet the damage that we see is a very narrow one, very much confined to the area

that has been constricted or pressed upon by the tourniquet itself. The excitability of the entire distal end in those cases remains normal and if ischemia should be responsible for the lesion, there is no reason why damages to the distal end do not take place as well. It is obviously easy reasoning to assume that ischemia is responsible for the lesions as we know that a tourniquet is used to arrest the blood flow, but one forgets that a tourniquet is also an instrument that can cut deeply into the different structures, the skin, muscles and nerves. Furthermore, in some of the experiments done on the animals there has been a definite constriction of the nerves that have been under pressure.

NEW YORK NEUROLOGICAL SOCIETY AND NEW YORK ACADEMY OF MEDICINE, SECTION ON NEUROLOGY AND PSYCHIATRY

Joint Meeting, March 9, 1954

James H. Wall, M.D., Chairman, Section on Neurology and Psychiatry, Presiding.

CASE PRESENTATIONS OF PSEUDONEUROTIC SCHIZOPHRENIC PATIENTS TREATED WITH PSYCHOSURGERY. DR. PAUL H. HOCH, DR. LAWRENCE POOL, DR. JOSEPH RANSOHOFF AND (by invitation) DR. JAMES P. CATTELL AND DR. HARRY H. PENNES.

During the past five years we had the opportunity of observing the results of psychosurgery in a series of more than 40 patients suffering from the pseudoneurotic form of schizophrenia. The operations included topectomy, medial lobotomy and precoronal lobotomy. All these patients had a mixture of anxiety, phobic, obsessive, depressive, and hypochondriacal symptoms — a neurotic superstructure masking the primary symptoms of schizophrenia. It was found that 65 per cent of the patients operated upon were significantly improved. In 16 of these patients we have a follow-up of three to five years after operation. In this group of patients 88 per cent show a significant improvement. Our data suggests that improvement after psychosurgery may continue for a much longer period than is usually reported. All the patients operated upon were sick for several years and received other forms of psychiatric treatment, such as psychotherapy, psychoanalysis, shock therapy, etc., without any lasting results. Two patients were presented and data discussed which showed no striking relationship between duration of illness or particular symptom constellation and response to psychosurgery, but there is a definite indication of a positive relationship between age at onset of illness and response to operation. The results of this study will appear in a future publication.

Discussion.—DR. BURNESS E. MOORE (by invitation): I am grateful for the opportunity to discuss this paper which represents a further attempt to clarify the role of psychosurgery in the treatment of mental disorders. In selecting a group of pseudoneurotic schizophrenics for operation the authors have provided an opportunity for the comparison of the response to psychosurgery of so-called neurotic and psychotic symptoms. I think they were wise to choose those patients who were more heavily weighted on the psychotic than the neurotic side. This should be of some theoretical as well as practical value, since we still do not fully understand the differences and similarities in the evolution of these two groups of symptoms. Unfortunately we are also often at a loss as to how to bring about even partial social recovery in this type of patient after prolonged psychotherapeutic attempts have failed. The demonstration that psychosurgical procedures afford a high degree of significant improvement without accompanying damage to the personality is exceedingly worth while. However much we may hope in the future to attain the psychological means of curing these patients, we have to accept the fact that for the present such means are largely unavailable. The authors are to be congratulated on their courage and continued pioneer efforts in this area.

All of us are having a great deal of difficulty in understanding why some patients improve and some do not. I would say that we are very hesitant to operate on a patient who has hypochondriacal symptoms which seem to mask an underlying scizophrenic process because that patient is utilizing his defenses effectively and seems to be functioning at the best level of which he is capable. Psychosurgery under such circumstances may disturb his integration and may bring out a severe underlying psychosis.

DR. PAUL H. HOCH: I want to thank Dr. Moore for his remarks. I would like to say only one or two things. First, we did not start out with psychosurgery in this group of patients. This was not the first treatment. These patients all had psychotherapy for quite a long time. The pseudoneurotic group of schizophrenic responds to psychotherapy in 20 to 25 per cent of the patients. They do not respond to shock. Actually they sometimes become worse with shock because it increases their anxiety very much. We feel that if patients fail with psychotherapy they should not be treated for 10, 15, or 20 years, as sometimes happens with different psychotherapists.

because today with psychosurgery many of these patients are relieved of their symptoms.

I would like to call your attention to the very widely ramified symptomatology of the patients I presented, which shows how a great degree of tension and anxiety produces different symptoms. The operation relieved not only the anxiety of the patient, but the other symptoms. These patients are an ideal group for operation, and I believe if they do not respond to psychotherapy they should be subjected to this smaller form of psychosurgery, which has not damaged them, but relieved the symptoms considerably in many patients.

NEUROLOGIC AND PSYCHOLOGIC FACTORS IN THE TOTAL BODY EXPERIENCE. DR. HANS OPPENHEIMER (by invitation).

The concept "total body experience" is suggested as an extension of the original idea of a body image. The various components constituting the total body experience are tentatively relegated to more or less distinct systems of integration and include the following: 1) awareness of posture and movement, the "postural model" in the narrow sense of Head; 2) awareness of spatial relationships of body parts (body orientation) with its linkage to language function; clinical manifestations of lesions: autotopagnosia; Gerstmann syndrome; 3) awareness of extrapersonal space, an extension of the directional body image; 4) the experiencing of body parts as being parts of the self, as belonging to the self. This functional component seems to be mediated through thalamo-parietal circuits. Lesions may cause periodic neglect, feeling of estrangement, illusion of absence and amnesia of the contralateral (left) half of the body, with or without psychopathologic elaborations and distortions (somatoparaphrenia); 5) a system mediating the awareness of certain basic ego-functions (motility, vision, hearing) via thalamo-cortical circuits. Lesions within this system may be a factor in the causation of imperception of central blindness and deafness and of anosognosia of (left) hemiplegia.

An evaluation of the factors leading to the denial syndrome is attempted and a distinction is suggested between imperception and denial of defects; the former is presumed to result from a neurologic defect, the latter to serve a psychologic purpose. Accordingly, the entire question of "anosognosic focus" versus "anosognosic personality" is re-examined. It is felt that such an alternative formulation constitues a pseudoproblem.

The relationship between perceptual impairment (predominately "neurologic") and wish to deny illness (predominately "psychologic") will determine the final clinical picture: perceptual impairment within the total body experience will facilitate denial and the more so the greater the characterlogically determined tendency toward denial of illness is. The term anosognosia should be restricted to the imperception or denial of basic ego functions (motility and distance perceptors). The specific perceptual element in the total body experience may be impaired at various "levels": a) diffuse perceptual impairment due to general lowering of the acuity of the perceptual apparatus in diverse brain disease; b) elimination of body territories or central sensual spheres from awareness due to thalamo-cortical lesions; c) a specific perceptual abnormality consistent with frontal lobe impairment resulting in failure to comprehend the *significance* to the individual of his defect.

In the absence of any form of perceptual impairment it is doubtful whether the central wish to deny illness will ever be strong enough to lead to imperception of basic defects short of psychotic denial of reality within the total body experience.

Discussion.—DR. JOSEF GERSTMANN (by invitation): The concept of the body image, or body scheme, or postural model of the body has not received much attention among neuropsychiatric workers for many years. It was not until recent years that this concept gained increasing interest in neurologic and psychiatric circles. There is, however, still a relative scarcity of adequate contributions to the subject. I therefore should like to commend Dr. Oppenheimer on his thoughtful and provocative paper. His proposition of a so-called "total body experience" deserves further, more specific study.

The best approach to the study of the body image and its disorders seems to me the clinical-phenomenologic one, with due elaboration of their neurologic and psychologic aspects. From this standpoint there appears to me the most feasible the following classification of the diverse manifestations of body disorientation referable to the body image: 1) direct disorders of the body image, as a rule bilateral—due to affection of the dominant cerebral hemisphere; II) indirect disorders of the body image, usually unilateral—due to affection of the nondominant hemisphere. The first group comprises: 1) general disorientation and lack of recognition in the sphere of the body and in the interrelation of its individual parts, one's own as well as those of other persons, known under the name of autotopagnosia (Pick); I prefer to name it somatotopagnosia; 2) primary specific disorientation and lack of recognition in the sphere of the fingers of both hands and in their spatial relationship, one's own as well as those of others, known under the name of fingeragnosia (Gerstmann); 3) disorientation and lack of recognition for right and left in the sphere of the body, one's own as well as that of others (usually associated with either of the two conditions just mentioned). The second group comprises: 1) lack of knowledge of disease, most frequently observed with left cerebral hemiplegia, known under the name of anosognosia (Babinsky). It may also be observed in cortical blindness and cortical deafness; 2) amnesia and agnostic unawareness of the impaired parts or side of the body, varying in degree from simple neglect or denial of their presence to the experience of their nonexistence, termed by me autosomatamnesia and autosomatognosia, respectively; 3) specific psychic elaboration (marked by formation of illu-

sions, confabulations and delusions) with respect to the defective members or side of the body, believed or experienced as absent, termed by me somatoparaphrenia.

DR. EDWIN A. WEINSTEIN: This has been a thoughtful paper in which there has been an attempt to bring a large mass of clinical data into a meaningful system that has been designated as "body experience". One's ideas of the "body scheme" or "body image" depend on what one is trying to explain and are determined by the types of cases seen, by the methods of study that are used, and by certain a priori beliefs of the observer. Thus the body image has been evoked in describing such varied phenomena as vertigo, phantom limb, confusion between right and left, denial of hemiplegia, and delusions of reduplication of parts of the body. The subject is tremendously important, I think, and these cases ought not to be regarded as merely bizarre neurologic curiosa. They furnish important clues as to what happens after prefrontal lobotomy and electric shock, and also relate to the whole problem of the relationship of perception and symbolic formation in language.

DR. OPPENHEIMER: I first want to thank Dr. Gerstmann and Dr. Weinstein for their kindness in discussing my paper. What I was mainly interested in, as can be seen from the title, was to evaluate the relative role of so-called neurologic and psychologic factors in this particular area which I have called the total body experience. This is not meant as an alternative formulation of the problem for in each individual case an attempt must be made to evaluate the question to what degree focal and non-focal factors contribute to the final clinical picture.

Finally, as far as the evaluation of neurologic and psychologic factors in any condition is concerned, I would like to quote Dr. Kubie in a remark which seems not inappropriate to be mentioned in this gathering that he was looking forward to the time when the shades of Freud and Cushing would shake hands!

AN ANTI-EPINEPHRINE FACTOR IN TREATMENT-RESISTANT SCHIZOPHRENIC PATIENTS. DR. LEO ALEXANDER (by invitation), Boston, Mass.

A recent study of the prognostic significance of adrenalinmecholyl test (Funkenstein test) demonstrating the role of exaggerated or deficient autonomic responses in prognosis revealed that markedly reduced response to epinephrine such as is characteristic of Funkenstein's Group V constitutes the most unfavorable prognostic group of all. The differences between all reaction groups were found to be statistically significant at the .03 level. Inspection of the data made possible by a 2 x k Chi Square analysis revealed that Group V was the greatest contributor to this difference as the most unfavorable group. Most of the patients falling into this group are schizophrenics, a few chronic neurotics probably better classified as pseudoneurotic schizophrenics, and a number of chronic psychalgic states with or without overt depressive features. Prior to the present study I had found that patients showing such reduced response to epinephrine did not respond to any treatment except insulin coma. In the two instances in which full recovery had resulted from insulin-coma therapy, the response to intravenous injection of epinephrine became normal when they recovered clinically.

The present study is an attempt to study the physiologic characteristics of reduced response to epinephrine. On injection of 0.025 mg. of epinephrine the blood pressure of most normal subjects will rise 30 to 70 mm. Hg., the average being about 50. For the purposes of this study, markedly inadequate response to epinephrine has been defined as blood pressure rise of less than 20 mm. Hg. upon intravenous injection of the above-stated amount. It was found that atropinization as well as administration of cortisone or ACTH counteracted the inadequacy of response to epinephrine, suggesting that this inadequacy of response is probably caused and maintained by an anti-epinephrine factor of cholinergic, muscarinic nature which can be counteracted by artopine as well as by the production of a hyperadrenal state. Two patients in whom the response to epinephrine became normal on ACTH therapy showed marked clinical improvement. One of these had failed on all other forms of treatment, while one had had no previous treatment. In the former the clinical improvement and the improved response to epinephrine outlasted the period of ACTH therapy. The other patient relapsed on discontinuance of ACTH. These preliminary experiences warrant more extensive therapeutic trial of ACTH in patients exhibiting this type of autonomic reaction pattern.

Discussion.—DR. DAVID J. IMPASTATO: The work of Dr. Alexander, and also of Drs. Funkenstein, Greenblatt and Solomon, may help us in sharpening our diagnostic abilities, because they have added, to the usual historical, physical and mental studies of reaching a diagnosis, easily obtained autonomic responses. If this work is fully corroborated, our psychiatric diagnoses may become more definitive. Their work may also help us to select a more specific type of treatment for our patients. Up until recently our indications for a specific type of treatment have not been very clear. With the help of the autonomic responses, the indications are clarified, at least to some extent.

Dr. Alexander has advanced the findings of Funkenstein and his collaborators, and his work supports the latter's postulate that changes in the psyche are accompanied by physiologic changes. The autonomic changes described by Dr. Alexander are just one aspect of the possible changes that might occur in the body before and following treatment. As you know, changes in the steroid excretion, in the blood, in salivation, in electrical responses of the brain, etc., have been described. I believe that eventually when all these changes have been correlated we may be in a better position to diagnose and treat the patient.

DR. ALEXANDER: The question as to which

patients secrete an excessive amount of epinephrine or non-epinephrine respectively has to be evaluated on indirect evidence. Epinephrine does not counteract the muscarinic effect of acetycholine. Therefore a drug like mecholyl will depress the blood pressure, such as in Funkenstein's types VI and VII. Nor-epinephrine, on the other hand, does counteract the muscarinic effects of acetylcholine, hence the blood pressure will not fall significantly and may even rise on injection of mecholyl, because of its nicotinic-adrenergic effect, such as happens in Funkenstein's types I, II and IV. In the types of cases which were the subject of my paper tonight, in whom the blood pressure failed to rise adequately on intravenous injection of epinephrine, we have no evidence as to whether or not they actually secrete inadequate amounts of epinephrine or nor-epinephrine. But I believe that I have presented conclusive evidence that their capacity to respond to intravenously injected epinephrine is blocked or counteracted by an anti-epinephrine factor, probably of cholinergic-muscarinic nature.

NEW YORK NEUROLOGICAL SOCIETY AND NEW YORK ACADEMY OF MEDICINE, SECTION ON NEUROLOGY AND PSYCHIATRY

RESIDENT'S PROGRAM

Joint Meeting, May 11, 1954

James H. Wall, M.D., Chairman, Section on Neurology and Psychiatry, Presiding.

ACUTE CEREBRAL VENOUS OCCLUSION MANIFESTED BY SPONTANEOUS SUBARACHNOID HEMORRHAGE. DR. STEFAN SZANCER (by invitation), Bellevue Hospital.

A 45 year old male was admitted with a few days' history pointing to an acute vascular disorder involving predominantly the left cerebral hemisphere. Lumbar puncture yielded a grossly bloody spinal fluid. This patient had a past history extending over a period of 20 years of venous thromboses involving the lower extremities and episodes of mesenteric thrombosis and pulmonary infarction.

Autopsy revealed a subarachnoid hemorrhage with hemorrhagic destruction of the left temporal lobe due to thrombosis of the left middle cerebral vein.

Literature dealing with the subject of non-infectious intracranial venous thrombosis was briefly reviewed.

PSYCHOPATHOLOGIC INDICATIONS AND CONTRA-INDICATIONS FOR THE USE OF SUBCOMA INSULIN TREATMENT. DR. DONALD C. GREAVES (by invitation), New York Hospital, Payne Whitney Clinic.

In distinction to the accepted definition of coma insulin therapy, the status of coma insulin therapy is still unclear. From 1942 to 1952 coma insulin therapy at Payne Whitney Psychiatric Clinic was considered to be that which produced a hypoglycemia sufficient to cause clouded consciousness for 45 to 60 minutes, stopping short of coma. This procedure was used in the treatment of 212 patients. There was improvement in 79.6 per cent of 133 schizophrenic patients. Those psychopathologic reactions most favorably affected are catatonic excitements with marked fear, depression or elation; acute paranoid reactions with fear, incoherence, depression or elation, and schizophrenic episodes of excessive anxiety. In contrast to those patients with schizophrenic illnesses, patients with affective illnesses did not do better when severe anxiety and fear were predominant. Patients with elation and anger, sexual excitement, resentment and panic all responded well. Treatment was evaluated on the basis of psychopathologic examinations at the initiation and termination of treatment. No attempt was made to evaluate results of treatment in terms of the condition at discharge from the hospital, since it was felt that this would give a misleading picture of the usefulness of this form of treatment. It is felt that many distressing symptoms can be controlled or relieved by subcoma insulin without necessarily altering the basic underlying illnesses.

SCHIZOPHRENIC CHILDREN UNDER THE AGE OF SIX. DR. MANUEL FURER (by invitation), Bellevue Hospital.

Two schizophrenic children from the nursery of the Children's Service of Bellevue Psychiatric Hospital were presented to demonstrate what are considered to be reparative attempts to deal with the deficiencies in adaptation that result from the characteristic lag in maturation of the ego. The preoccupation with the surface of their bodies and with distant sense perception is felt to represent, in part, an effort to deal with an incompletely established body image and separation of the self from the not-self. The early rigidity and compulsiveness in their behavior, described by Kanner as a demand for sameness, and sometimes including impulsions as described by Bender and Schilder, are thought to represent, in part, an attempt to deal with an external world conceived as chaotic. This conception arises partly out of the defect in differentiation of

the self, as well as the projection of a sense of internal disorganization, and perhaps also, direct disturbances in perception. It was pointed out that these preoccupations appear transiently in the normal development of the infant at a time when similar problems are being dealt with by the maturing ego; the body image problem under a year of age and the problem of the control and organization of impulses beginning between one and two years of age.

A Survey of General Surgical Procedures in a Group of Emotionally Disturbed Women Patients. Dr. William A. Triebel (by invitation), New York Hospital-Westchester Division.

The difficulties encountered in diagnosing organic pathology requiring surgical intervention in emotionally ill persons are discussed. The case of a 26 year old nursery school teacher who was operated upon for what appears to have been psychogenic vomiting was presented.

A review of previous surveys of this topic was made with a criticism of the adequacy of their control studies. The results of a survey of 300 women patients at New York Hospital-Westchester Division with a control group matched with respect to age, marital, and socio-economic status was presented.

The main findings were:

1. The surgical rate among patients was 43 per cent, in the controls 28 per cent.
2. The psychoneurotic group had a surgical rate of 65 per cent; the matched controls 23 per cent.
3. Each diagnostic category had a surgical rate significantly higher than the controls with the exception of the dementia praecox group when the rate was not significantly higher than the control group.
4. Patients tended to have multiple procedures.
5. In the patients in all diagnostic categories gynecological and rectal procedures made up 44 per cent of the operations, but made up only 20 per cent of the operations in the control group.

Several hypotheses were offered to explain these differences and some suggestions were made to the end of avoiding surgery for emotionally determined symptoms.

The Creative Drive: A Case History. Dr. Richard S. Blacher (by invitation), Mount Sinai Hospital.

The artist has always enjoyed a special position in society, in part due to the unusual nature of his inspiration. He has been thought to create by reason of divine influence. Through the ages philosophers have speculated on the basis for artistic creativity, and in recent years the creative drive has come under study by psychiatric workers. The sublimation of sexual and infantile impulses, the need to turn from reality, the desire to control, and the wish to share guilt with others have all been mentioned by psychiatric writers. The relationship of artistic creation to biologic creation in both men and women has been pointed out. A case history is presented which, it is felt, demonstrates the sublimation of the biologic creative drive by means of artistic creativity. Further, it is shown how both types of creativity may be utilized as a defense against the fear of impending death or disaster. The patient is a 39 year old woman who was successively a singer, actress, sculptor, writer, poet and photographer, but who was dissatisfied with each artistic endeavor. Although unmarried, she decided to have a child. In her eighth month of pregnancy she developed a depression and was hospitalized. She talked freely of her early rejection by her mother, about identification with her father, and of strong homosexual tendencies. When she went into false labor she became panicky, and told of a story she had once written about a woman who kept herself from committing suicide by means of frantic creativity, only to die in the end. When the patient is seen in the light of her own story it would appear that this magical warding off of death is the motivation for the patient's own creativity.

Discussion

Dr. S. Bernard Wortis: We have had an interesting evening, and the residents who have given papers tonight should be congratulated for keeping within their set time limit. This is a commendable start in one's public speaking life!

With regard to Dr. Szancer's paper, migratory phlebitis is an interesting syndrome which was described by Osler. I am especially interested in this condition because it may be related to the development of an organic mental syndrome. I have seen a patient with this clinical picture.

Dr. Greaves' interesting report gives confirmatory evidence to reports from other clinics and emphasizes that the prominence of affective coloring in a schizophrenic improves his prognosis. I should like to know what Dr. Greaves meant when he indicated they used psychopathologic criteria other than our usual diagnostic labels. Perhaps he will describe for us more specific psychodynamic changes, that he intimates were used in evaluating these patients.

Dr. Furer focused on the importance of recognizing the obsessive compulsive syndrome in earliest childhood, together with changes in the body image psychology. This has been stressed by Bender and others, and suggests that there is a biologic basis for childhood schizophrenia. Dr. Lauretta Bender has also stressed the presence of "soft" neurologic signs as evidence of disturbance in neuromuscular patterning.

Dr. Triebel's paper points to the polysurgical addict, the emotionally disturbed patient. I hope that this paper could be read before the Surgical Section of this Academy. As I was listening to Dr. Triebel I could not help but feel that our teaching of undergraduate medical students must be unsatisfactory, because we do not alert future physicians enough to these problems.

Dr. Blacher's paper interested me very much, because he described the psychobiologic creative drive in the artist, and how in his patient pregnancy represented a drive to create. We see frequently in Bellevue many girls who are pregnant, where I think

there are other biologic drives in action rather than the artistic one!

Dr. M. Ralph Kaufman: I should like to comment on three of the papers. First, Dr. Greaves' paper in which it seems to me he pointed out what struck Dr. Wortis, too, that as one looked at the various categories one was reminded of practically every group of case that had ever been presented in terms of improvement. Dr. Greaves made the point that what he was talking about was improvement of specific symptoms at the time, rather than improvement of the total situation. He also related the use of subcoma insulin treatment to intensive psychotherapy. Some of his improvements are a little on the high side, but I think it was really in terms of the specific situation.

In Dr. Furer's paper he presented the Bellevue point of view in regard to childhood schizophrenia, and very well; the Bellevue group, especially Dr. Bender, has been in the forefront in the delineation of this particular category.

Dr Triebel's paper was the one which interested me most—outside of Dr. Blacher's, since that came from our service. He pointed out one aspect of the situation, that psychiatric patients by and large seem to have more operations than non-psychiatric patients. Ideally every psychiatrist likes to feel he does not make a diagnosis by exclusion. On occasion, a diagnosis of no organic disease is made, and the psychiatrist is able to point out that there must be organic disease present.

Dr. Bernard C. Meyer (by invitation): I would like to add my appreciation of these five most interesting and diversified papers presented here this evening. I will confine my remarks to the last two papers. Dr. Triebel has spoken of surgical problems arising among psychiatric patients. The converse, too, is a rich and interesting field, namely, the psychiatric complications of surgical patients. There are patients who approach surgery with a conviction that they will die, a state of mind which must be distinguished from the more common fear of death. Experienced surgeons tend to shy away from operating upon patients possessed of such gloomy forebodings because on occasion the latter have come true.

Dr. Blacher's patient, with whom I am familiar, provides a most fascinating study, embracing both psychologic aspects of pregnancy and of creative art. It is clear that this young woman was compulsively pursuing in vain one artistic expression after another and always failing to achieve her goal. It is also obvious that a basically self-destructive aim underlines her entire life story.

Dr. Joseph W. Owen: Dr. Greaves' paper about the use of subcoma insulin reminded me that while on military service acute panic was a difficult problem to handle. These panics occurred in good conscientious men who under long strain and great stress developed marked excitement with delusions and occasionally some hallucination. These states lasted generally one to three weeks. We tried every type of sedation we could, and we seemed to do very little for them, until someone suggested subcoma insulin. The results often were quite dramatic. I should think further experimentation with this method might be indicated on various excited wards.

Dr. Donald C. Greaves: I would like to make two points. We did not have any detailed information on the different groupings from the standpoint of psychodynamics.

I wish to thank Dr. Kaufman for emphasizing that the impression was based on the patient's state at the completion of insulin and had little correlation with the state at the time of discharge from the hospital. A good many were in the hospital for weeks and months following the completion of their insulin treatment.

Dr. William A. Triebel: I am sorry if I have left the impression that I felt this increase was entirely due to needless surgery; we do not have enough evidence in this survey to say that. Probably a proportion of these cases do represent people who had no pathology. Operation proneness is probably due more to anxiety and body over-concern than due to conversion.

BOOK NOTES AND REVIEWS

Books received are acknowledged and given a brief description in this section. Selections serving a variety of interests will be made from these for a more extensive review, as far as space will allow.

BOOK NOTES

Eissler, Ruth S., M.D., Freud, Anna, LL.D., Hartmann, Heinz, M.D., and Kris, Ernst, Ph.D., Editors, THE PSYCHOANALYTIC STUDY OF THE CHILD, VOLUME III. [New York: International Universities Press, 1953. Pp. 412, $7.50.]

This volume represents the latest volume in this annual series which by now needs neither introduction nor endorsement. It has established itself as a valuable and happily anticipated yearly event. There are presented twenty-two papers most of them appearing in print for the first time. As always the list of authors is very distinguished: Anna Freud, Hartmann, Bornstein, Greenacre, Eissler and Roheim to mention a few.

As to the quality of the individual contributions, it remains uniformly high, although not all are of equal interest. Bornstein's long paper on a "Fragment of An Analysis of an Obsessional Child" is of very great interest and beautifully written. Hartmann gives us an extremely valuable paper on the metapsychology of schizophrenia in which he applies some of the newer work and theorizing on ego psychology to the problem of schizophrenia. He studies the problem in terms of specific ego functions which he integrates with certain well-known data about schizophrenic defense, object relations, language and reality testing. He hopes to bridge some of the gap between instinctual and ego aspects of schizophrenia. He finds that "his hypothesis of deficiencies in the primary autonomous factors in the ego contributing to the vulnerability of defense and neutralization." This he feels is one etiological factor in schizophrenia and one of the factors in predisposition to the disease. The paper reserves careful study and is not easily summarized. The other contributions in the volume are nearly equally stimulating, and in a longer review would deserve discussion. The volume is highly recommended.

JOSEPH ZINKIN.

Fenichel, Otto, THE COLLECTED PAPERS: FIRST SERIES. [New York: W. W. Norton & Co., 1953. Pp. XIV + 408, $6.50.]

This is the first of two volumes to be published which will gather the late Dr. Fenichel's widely scattered papers and present many of them in English for the first time. Fenichel was a distinguished psychoanalyst and is best known for his encyclopedic "The Psychoanalytic Theory of Neurosis." The papers forming this first volume were written between 1922 and 1936. The second series, now in preparation, will contain the papers written between 1936-1946. These papers have been collected and edited by Dr. Hanna Fenichel and Dr. David Rapaport. The papers not previously available in English have been translated by James and Alix Strachey.

The thirty-four papers here presented do not reveal Finichel as a pioneer nor as a great speculative mind, but rather as a critical, diligent observer and systematizer. Some of his papers remain classical in the literature of analysis. It is a fine monument to an honest scientist and will remain delightful and valuable reading for a long time to come.

JOSEPH ZINKIN.

Krieg, W. J. S., FUNCTIONAL NEUROANATOMY. Second Edition. [New York: The Blakiston Co., 1953. Pp. XVIII + 659. $9.00.]

The first edition of this book appeared twelve years ago, at which time it was considered one of the best treatises on the subject. The author's outstanding ability in artis-

tic draftsmanship, as demonstrated in the remarkably instructive three dimentional illustrations, affords the student a clear and pleasant visualization of the various brain structures.

The plan of the present edition follows along the same principles as the first by stressing the structural organization of the neuraxis in terms of its functional systems. The contents of all the chapters have been brought up to date.

The text is concluded with a guide to laboratory studies of the central nervous system, and an atlas of drawings of serial sections of the brain, stem, and spinal cord in transverse plane and of the cerebral hemispheres in frontal and horizontal planes.

As a neuroanatomical text for the use of students of neurology preparing for examinations, and as a source of reference for the practicing neurologist, the book has few equals. Its nineteen chapters cover the field exceptionally well.

Sadler, William S., PRACTICE OF PSYCHIATRY. [St. Louis: C. V. Mosby Co., 1953. Pp. 1183. $15.]

This volume is from the pen of a psychiatrist who has been at it for nearly fifteen years. The volume shows the broad perspective and eclecticism of one who has lived through all the major movements and developments of modern psychiatry. This textbook is more inclusive than any other on the market. It contains a massive amount of information and is up to date. It should be very helpful to general practitioners and budding psychiatrists. Experienced psychiatrists will find it to be a very useful reference volume. It is divided into seven parts; General Psychiatric Considerations, The Pathoses, The Neuroses, The Psychoses, Personality Disorders, Psychosomatic Diseases, and General Psychotherapeutics. There is an appendix on schools of psychiatry, an eight page bibliography, a thirty-four page glossary, and a thiry-six page index. The author prefers to think of the practice of psychiatry as the practice of personology, which the reviewer would consider an inadequate term. The term pathoses, following Thorne, is used to classify the 'pre-neurotic disorders.' In such a massive volume one cannot agree with everything, but this is not so important as the author does not at all lean to dogma. The volume is well recommended.

A. N. F. D.

Annual Report Smithsonian Institution. [Washington, D. C.: United States Printing Office, 1952 (1951 Report). Pp. 449 illustrated, and 1953 (1952 Report). Pp. 461, illustrated. $3.00 per volume.)

These Smithsonian reports continue to command the interest of scientists representing a wide variety of disciplines. In addition to the reports of the activities of the different departments composing the Institution, each volume has a "General Appendix" presenting articles dealing with a variety of scientific researches and reviews.

Among the articles in the 1951 report, the following should be of particular interest to physicians. "On Einstein's New Theory," by Leopold Infeld, "Ultrasonics" by Arthur R. Laufer, "The New Chemical Elements," by Saul Dushman and "Enzymes, Machine Tools of the Cellular Factory," by B. A. Kilby. In the 1952 report, "Recent Advances in the Study and Techniques of Anatomy," by P. G. Roofe, and S. W. Lesher, "Pharmacology of Antibiotics," by Henry Welch, and "The Use of Music in the Treatment of the Sick by American Indians," by Francis Densmore." Both volumes are liberally illustrated by photographs and maps. Their publication constitutes an outstanding service to science and scientific interests.

Sunder-Plassman, Paul, SYMPATHETICUS CHIRURGIE. [Stuttgart: Georg Thieme; New York: Grune & Stratton, 1953. Pp. 162. 146 illustrations. D. M. 54.]

The author of this book, Prof. Dr. Paul Sunder-Plassman, Director of the Surgical Clinic and Polyclinic of the University of Munster, Westfalia, has spent 25 years in this field of research and practice, and the variety of surgical operations presented on the sympathetic nervous system seems to be complete and inclusive.

Following a brief introduction, the text passes on to the fundamental ground work of sympathetic surgery, describing and illustrating in detail the gross and microscopical anatomy

of the divisions of the vegetative nervous system. The next major section of the book deals with the innervation of the blood vessels, the lymph channels, lymph ballicles, and the structure and physiological significance of the glands composing the neurohormonal system. It then follows an account of the sympathetic system pathways, cords, and central nuclei. Exactly half of the pages of text is devoted to this valuable preparatory orientation and the fundamentals.

The second half of the book presents the clinical surgical indications and aspects of numerous syndromes including those for sympathetic blocking (cervical stellate, ganglion, splanchnic, lumbar, sacral peripheral vessels, for pains, etc.) and pharmacological blocking procedures.

A section is devoted to surgical techniques of the different operations indicated, followed by a description of the diseases and conditions such as aneurysms, arthritis, embolisms, Raynaud's disease, "central" pain, causalgia, hypertension, etc., that may be relieved by these operations.

This is a most valuable book for the neurologist and the surgical clinic. The paper, printing, and numerous illustrations are superb. It is a splendid job of bookmaking from the publishing standpoint and a pleasure to read.

BOOK REVIEWS

Abrahams, Joseph, and Varon, Edith, MATERNAL DEPENDENCY AND SCHIZOPHRENIA: MOTHERS AND DAUGHTERS IN A THERAPEUTIC GROUP. A GROUP-ANALYTIC STUDY. [New York: International University Press, 1953. Pp. 240, $4.00.]

This is really an intriguing study, and one that is more than necessary to our knowledge of the problem of the gensis and life-history of schizophrenia. It is rather a pity that such a relatively pioneer work proves to be so relatively sterile in new conclusions. It is a striking example of much effort and few positive results.

The research was done at St. Elizabeth's Hospital as a part of the Group Psychotherapy Research Project supported by V.A. funds and having Dr. Florence Powdermaker as the responsible investigator (1947-1949). The basic and original idea was that of putting in one group seven mothers and their seven schizophrenic (but adult) daughters. The patients were chronically ill. The object was to study their relationships and inter-actions both as pairs and as a group. The important contribution of the project is the obvious dependence of the mothers on the sickness of the daughters. The authors speak of the "daughters' as the mothers' alter egos." The records of the sessions are given verbatim. It is, up to a point, extremely fascinating as a record, but seemingly less productive of basic results and conclusions than one would have hoped for. The group analysis and therapy was necessarily carried on a very superficial level. To have accomplished the task of keeping the group together was in itself a feat.

The mother's anxiety, dominance, resistance and tremendous emotional involvement is outstanding. Yet the total impression of the work is that far more questions were raised than answers given. One can only hope that more such studies will be made and carried for longer periods and at deeper levels. The reader is impressed with sickness of the mothers of these daughters—an observation with which every psychiatrist has long been familiar. Certain reactions to the illness, the hospital, society, and the family are clearly in need of further study and would be fruitful from a sociological point of view.

JOSEPH ZINKIN.

Ames, Louise Bates; Learned, Janet; Metraux, Ruth W.; & Walker, Richard N., CHILD RORSCHACH RESPONSES: DEVELOPMENTAL TRENDS FROM TWO TO TEN YEARS. [New York: Paul B. Hoeber, Inc., 1952; Pp. xiv + 310. $7.50.]

Measurement in psychology never starts from a zero point but from an average and extends in two opposite directions, toward the greatest and the lowest value scored by members of the studied group of persons. It is

impossible to evaluate an individual without knowing the norms of the group to which he belongs. The main contribution of this very valuable and greatly needed book consists of norms for children between the ages of two and ten. There are 13 age level norms in this volume, separate norms for each half-year level between two and six, and for each full year between six and ten years. Each set of averages is based on examinations of 50 children, boys and girls. No previous attempts at establishing norms were founded on such a large group of children, 650 altogether, nor included such a wide age range. Nearly all of the children are from two Connecticut towns and the great majority of them come from higher socio-economic groups. Three-fourths of them are of superior intelligence and none is below the dull normal level. It is very difficult to obtain a large and truly representative sample. The children were brought in by the parents for consultation for reasons such as these: mother did not quite understand her child, child was jealous of a sibling, was fearful in gym, was absentminded, etc.

Intelligence has a distinct influence upon the Rorschach results of children as well as of adults. Therefore we need norms for each of the intellectual levels (superior, average, inferior) at each age level. The authors of this book performed an excellent job in providing us with norms for the brighter half of children. Although this book is not an introductory manual, it contains a description of the authors' scoring system, of the technique of administering the Rorschach to children, and of previous studies in the field. The reader is given an opportunity to acquaint himself with the perceptanalysis of childhood. The numerous sample records are most helpful. The authors were not motivated merely by a desire to create useful statistical tables but by the well-founded wish to deepen the understanding of the child's psychology and particularly of the modifications in the child's psychology brought about by the gradual process of maturation. This book, a product of the Gesell Institute at Yale University, is indispensable for anyone interested in the application of the Rorschach method to children.

Z. A. PIOTROWSKI

Bassett, David L. A STEREOSCOPIC ATLAS OF HUMAN ANATOMY. [Portland, Ore.: Sawyer's Inc. 1952. Pp. xxi + 482 + 238 Colored Kodachrome transparencies in four volumes $27.50. View Masters extra cost $2 – $7.00.]

At occasional intervals during the past score of years various publishers have presented anatomical atlasses of the stereoscopic type. Considerable gain in learning can be had from such a technique, since everyone concerned with human anatomy has frequent occasion to refresh his mind on the subject, and this need is particularly true in the field of neuroanatomy. Three-dimensional presentations are ideal for original learning or for review, since they present varying dissections readily available with considerable more accuracy than flat plates. Depth perspective can be maintained and is of tremendous value in appreciating the relationships so essential in neuroanatomy.

This recent stereoscopic atlas, which is the first section of a complete human anatomy, is published in four volumes dealing with the central nervous system. The technique of stereoscopic projection involves the use of the well-known View-Master kodachrome transparencies employing a regular View-Master with or without special lighting attachments. This technique is much more compact than the older stereoptican and since permanent lighting attachments with transformers and cords are available, standardized lighting situations can be maintained. From a view technique angle, therefore, this production is mechanically outstanding.

The heart of such an atlas, however, is not in its mechanical features, but in the reproductions themselves, and here the author and the photographer have collaborated in scientific color photography to produce an amazing collection of outstanding reproductions. The depth perspective and illumination of deep lying structures is extraordinarily well done and deep recesses and foramena beautifully depicted. The 238 kodachrome transparencies must be considered as a masterful achievement.

The final phase and of course the entire basis of the work is the original dissection and preparation, and here the anatomical skill of the author has yielded a most useful series. He

started by using the same subject inasfar as possible for all successive dissections, giving unity and permitting sufficient overlap for adequate orientation. Every effort was made to show the natural relations and unusual procedures and special techniques were employed only when necessary. The result is a series of dissections which should be of profound interest to the professional anatomist as well as the student.

Along with the kodachromes the author has presented a series of sketches based on tracings of the original photographs. One of the views of each dissection was enlarged and traced against a grid which shows the magnification or reduction in each case. The tracings were then given adequate shading and labeled, making for rapid identification of the structures viewed. This technique is most convenient and does away with the distortion resulting from pin sticking or labeling the specimens themselves.

The labeling employs BNA terminology and in instances where no such terms exist appropriate English terms are used. The Atlas carries a complete conversion table for such terms and anyone familiar with any of the classification systems will be easily able to use it.

In addition to the outstanding value of the dissections, the color is excellent, the author using the latex color red or painting the arteries if necessary, and latex blue or paint for the veins. Lymphatic vessels are easily recognized and of course all views are of actual human tissue, not models.

From the point of view of the neurologist or the psychiatrist, the selection of the dissections is important. It is of course impossible in a review to cover this material in detailed fashion, since it would merely represent a repetition of the lists of pictures. The first section involves exploration of the meninges of the brain in situ and exploration of the brain from its basal aspect. This section is bound into the first volume, which contains the sketches and the labeled nomenclature. There is also a short discussion of each section for orientation purposes. At the back of the text the kodachrome views are mounted in separate, readily available envelopes, are of extremely easy access and each volume presents a compact, self-contained section.

Volume Two takes up the exploration of the brain from its superior, lateral and medial aspects, and Volume Three considers exploration of those parts of the brain supplied by the posterior cerebral artery and a complete study of the cerebellum. This section also includes the relationships of the cerebellum to the brain stem and exploration of the basal aspects of the medulla and pons. Volume Four takes up serial transverse sections of the brain stem and while these are not microscopic sections, the preparations are so clear as to make them almost reasonably good substitutes, since all important details can be easily made out. Most important, this section shows in beautiful clarity the relationships of the various techniques and the brain stem structure. This section also includes dissections of the frontal section of the brain and an exploration of the spinal cord and meninges in situ.

Finally, there are seven radiographs of the brain, including some excellent angiograms and some pneumoencephalograms, which should be of value to the beginning student.

From the above cursory summary, it can be seen that the material covered is most adequate for the student in neuroanatomy and particularly ideal for the psychiatrist or neurologist who wishes to check a point for reference in any situation. It should prove of particular value to those psychiatrists who are preparing for special examinations, since the stereographic productions reproduce the actual brain tissue in a fashion which no flat plate can ever hope to achieve.

In addition to the above features, there is a very comprehensive index, which is readily workable.

Perhaps the only complaint which can be directed at this amazing production is the cost, which at first glance may seem expensive. If one works through the Atlas, however, the time and energy involved in the dissections and the technical skill employed in the reproductions yields the impression that the price is negligible in comparison to value received. It is extremely seldom that a stereoscopic atlas can be enthusiastically recommended to beginners as well as experts. This volume certainly qualifies from the neuroanatomical viewpoint.

DOUGLAS M. KELLEY

Bellak, Leopold, with Pasquarelli, Blaise, Parkes, Ernest, Sonya Bellak, and Braverman, Sydell. MANIC-DEPRESSIVE PSYCHOSIS AND ALLIED CONDITIONS. [New York: Grune and Stratton 1952. Pp. xiii + 306, $9.75.]

Bellak and his collaborators give us in this volume a review of the literature (some 1200 references) on manic-depressive psychosis and many of its closely related conditions. His previous volume on Dementia Praecox, 1948 was, of course, along similar lines and very valuable. The present work was supported by a research grant from the National Institute of Mental Health of the U.S. Public Health Service.

It is to be carefully noted that this is not a highly critical review; there are only minor (and often very personal) judgments as to the validity of any of the specified data covered in the many references. It is for the reader to make such evaluations and to know that a certain piece of work or a certain statement has been made by someone, somewhere.

The senior editor has given us in his introduction a multiple-factor psychosomatic theory of the manic-depressive psychosis along the same lines as that which he offered for schizophrenia. This is really a none-too-well thought out conglomeration of electic theorizing which is not too helpful. We have had a good deal of this in the past, as the history of psychiatry bears out. As for the body of the book itself, we must admit a certain disappointment. There is a vast difference between the quality and thoroughness of this volume as compared to the previous one on dementia praecox. There is here a hurried, superficial and often amateurishness about the abstracts. Important details are not given; conclusions seem to crop up seemingly out of nowhere. Many references are listed in the bibliography at the end of each chapter which have not been mentioned or reviewed in the text. A review should review, not merely list articles or work in the bibliography; for that we have the Index Medicus. The review (and number) of references included in the second part (covering reactions to pregnancy, involution, and old age) are far too few in view of the total literature in these areas. The treatment of these very common and extremely important conditions is definitely inadequate. This volume is far inferior to its campanion volume on schizophrenia. Nonetheless, it is a useful compendium, since there seems to be a tendency to neglect these conditions for the more overwhelming problem of schizophrenia.

One word as to the printing of the volume itself. The paper is very poor—stiff, thick and cheap, the binding none too strong; the price, for a relatively small book of some 300 pages, is outrageously high even for times of high production costs. Medical books are notoriously expensive, but there is certainly a point at which we feel we must begin to protest and react strongly.

JOSEPH ZINKIN.

Bender, Morris B. DISORDERS IN PERCEPTION. [Springfield, Ill.: Charles C. Thomas 1952. Pp. 109. $3.00.]

This monograph is subtitled, With Particular Reference to the Phenomena of Extinction and Displacement. The work involved was done with different collaborators and frequent reference was made to the principles of Jackson and the observations of Head. The subjects were brain injured veterans, cerebral palsied children, adults with disease of the nervous system and normal individuals. The principal used was that of simultaneous stimulation of two different regions in a sensory field. This showed disorders in perception which were not apparent on 4 tests using single stimulation. The two chief defects were a lack of response or reduced perception and a mis-localization of the percept. The method of simultaneous stimulation has been in use for long going back to Oppenheim in 1885. The phenomenon that the author calls extinction he notes as having been described before under such terms as inattention, repression, sensory eclipse, etc. In the process a sensation disappears or a stimulus becomes imperceptible when another sensation is evoked by simultaneous stimulation elsewhere in the sensory field. In displacement the subject perceives two stimuli but one of the percepts is displaced in a predictable direction. Among types of displacement previously described are allesthesia, synesthesia and exosomesthesia. Obersteiner described allochiria in 1880. Crossed displacement and con-

tralateral displacement have previously been described. The author says there have been few if any reports on displacement of the type he describes. There is a close relationship between extinction and displacement. They may be found in the normal subject but in the patient with disease of the brain or spinal cord the phenomena appear quite conspicuous. The subject is considered under the following headings; Modes of Stimulation and the Phenomenon of Extinction, Sensory Phenomena Obtained on Simultaneous Stimulation in the Normal, Extinction Phenomena in Disease, Special Studies in Extinction, Extinction and the Phenomenon of Sensory Displacement, and Theories on Extinction. Extinction seems to be an inherent part of every sensory process while displacement also is a mode of interaction between two stimuli. Case material is given. This monograph is a very useful contribution carried out along excellent scientific lines. It should be welcome reading to clinical and research neurologists. The testing maneuver used for a long time is brought to fresh light and reexamined. Its usefulness is enhanced in that it is helpful in doubtful or difficult cases.

A. N. F.

Benedek, Therese, PSYCHOSEXUAL FUNCTIONS IN WOMEN. [New York: The Ronald Press Co. 1952. Pp. 435. $10.00.]

This volume is a Chicago Institute for Psychoanalysis study. The author herself sums up the purposes and conclusions of the study fairly well. "The primary object of this study is the discovery of laws which govern the response of women to the fluctuations of their hormones during the sexual cycle. The psychoanalytic concept of the personality as a dynamic and structural organization provides a basis for segregation of the individual variations, and this is a prerequisite for the recognition of those psychodynamic processes which universally motivate sex behavior." "Essentially, the task was to present the method by which the correlations between ovarian function and the psychodynamic processes were disclosed. The presentation of the vaginal smear, basal body-temperature technique has shown the method for estimation of qualitative and quantitative changes in sex hormone production. Exposition of the psychoanalytic technique was applied to this investigation has shown how psychodynamic manifestations are correlated with hormone changes. The coordination of these two methods, despite the differences in their fields of observation, has provided a new tool for biological research. We have used the estimation of the gonad function as the basis for comparison with the predictions which were deduced from interpretation of the psychoanalytic material. The reasons for this procedure and its advantages are obvious. Although the histological changes of the vaginal mucosa can be related only indirectly to ovarian function, the relationship is simple. While psychoanalysis is the best available method of interpreting the motives of human behaviour, we could not at the beginning be sure that we should find that our methods would disclose a simple and direct relationship between ovarian cycle and behavior. This relation, however, is so clear that it tends to validate both methods and to justify the deductions. Thus we believe this investigation has shed light upon some problems of psychoanalytic theory, especially those of the sexual drive." "As a result of the present investigation we can say that the sexual cycle is a psychosomatic unit." "The question of whether this investigation can be used for the purpose of combining hormone therapy with psychoanalysis has already been raised. We studied only how the individual reacts to her own hormones. It is not improbable that microscopic study of the psychodynamic reactions to hormones might clarify indications for hormone therapy. But it is evident that the psychosomatic reactions to hormones are so complex that we should caution against medication with hormones rather than encourage it." "These and many other related problems await an answer from future research. This work should be viewed and examined as a step in the direction of fathoming the riddle of psychosomatic function." The author has made a useful and good 'step' in the direction indicated. The volume should be valuable for those doing research in this direction. It makes a worthwhile library reference volume. Boiled down to monograph size one might have recommended it for general use but it is a large volume at a pretty

good price and the reader should look it over before investing.

A. N. F.

Bergler, Edmund, THE SUPEREGO. [New York: Grune & Stratton, 1952. Pp. x + 367. $6.75.]

This book presents a series of the author's investigations dealing with the differentiation between conscious conscience and the unconscious conscience, which the author feels is the real master of the personality.

He begins with a discussion of the power of the superego, working on the notion that the unconscious conscience is a dynamic "torture for torture's sake . . . all-powerful and all pervasive" force. He lists some dozen components which are hypothetical but of interest.

The author in his next chapter lays out some rules taken from his book *The Basic Neuroses* to exemplify the types of torture of the superego which include its peculiar formalism, the equating of wish and deed, its refusal to accept excuses, its devaluation of success, and many others. These rules laid out dogmatically make one almost feel the author is talking about something real, and the reader should be frequently reminded that the whole book is strictly hypothetical.

Bergler differentiates three sorts of consciences, the normal, which "ordinarily gives a stop signal which is obeyed"; the neurotic, in which "the stop signal is only the preamble to corruption and compromise"; and the criminotic, which permits false aggressive defenses to develop and, hence, demands strong masochistic penalties. This sort of classification undoubtedly describes the functioning of some people, but one wonders if all the world fits these three groups.

The author next shifts into problems of the re-formulation of oralmegalomaniacal material, giving examples of the child's development through the oral, anal and phallic levels, and the resultant methods of handling various problems developed in these periods. He stresses the position of psychic mechanism in neuroses, and then proceeds to a very complicated discussion of the paradoxical moral code of the unconscious ego. Here he uses a technique known as "psychic microscopy" in which he works out various layers of function, making the entire evaluation seem most scientific and, hence, I suppose, theoretically accurate. Actually, the chapter, as is the book, is made up of a series of assorted cases, literary quotations, bits of psychiatric information, and general hypotheses jammed together to make exceedingly difficult reading and almost defying comprehension.

The author next introduces us to a chapter on external and internal justice in which he shows considerable lack of cognizance about the external part at any rate. His discussion, for example, of cattle rustling is remarkedly naive. He points out that the inner code is much more cruel, giving no time off for good behavior, and he has a long set of tables comparing the two types of justice, which certainly highlight his point. The same sorts of tables appear in his next chapter on normal and neurotic guilt, comparing the two. The next part of the book deals with the problems of neurotic symptoms and their pseudo-connotations, followed by a fairly sudden shift into the relationship of dreams to the inner conscience and our first thoughts on awakening. He concludes with an interesting discussion on whether or not the parents or the inner conscience should be blamed for the neuroses of the child, and here he suggests that in some cases "the *worst* the parent can do is to force the child to create specific defenses, while *at best* the parent cannot prevent specific infantile misconceptions." This certainly leaves the parent out of the picture and puts it squarely up to the child, some of whom, he says, " 'cannot take' the unavoidable hurts inherent in unavoidable infantile frustrations." If this be true, one would suppose we might as well give up the parents and start work early on the children. If they can't take it, however, one wonders what is the future of the human race.

The last chapter is headed "The Tragicomedy: Superego Triumphant," and one feels that this is a good title, since it highlights the entire book—comic in its overdrive toward scientific accuracy, and tragic in its attempt to force a hypothetical notion into such a framework. Some of the author's concepts certainly are important, and one wishes that they could have been presented in a simple, uncomplicated fashion where they could be adequately evalu-

ated and used. In their present distribution, scattered throughout the pages of the book, I fear they will be lost in its chaos.

DOUGLAS M. KELLEY.

Bridgman, M., COLLEGIATE EDUCATION FOR NURSING. [New York: Russell Sage Foundation, 1953. Pp. 205. $2.50.]

The Nursing profession, particluarly those responsible for educational programs and hospital administration, will be grateful to Dr. Bridgman and the Russell Sage Foundation for this appraisal of the field of Nursing education.

Limitations of the existing educational systems along with causes and remedies are given in a competent and objective fashion. The underlying conflict has been between the necessity for maintaining Nursing services and keeping hospital costs down on the one hand, while on the other, the need is to improve Nursing education to equip personnel for increasingly diversified and demanding abilities. Both are legitimate interests but the educational interest was the half that lagged. This can no longer be done and compete with other professional opportunities open to high school graduates. Hence, another value of this book comparing curricula of the higher institutions of education with those the Nursing schools gives much help in revising the programs to meet sound educational principles of established learning institutions. However, the statistical factors and increased faculty seem to be emphasized without giving sufficient attention to qualitative teaching and learning situations that Nursing offers. With all the weaknesses inherent in the Nursing schools, in hospitals particularly, other professions have long recognized the values of the parallel practice to Nursing students as compared to other professional groups. Too much practice without supervision is an accurate criticism however.

Dr. Bridgman has pointed up the historical development of the hospital school curricula and is to be commended for the analysis of the overcrowded preclinical period in particular. The entire hospital school is examined in a very competent and clear way, thus enabling hospital administrators and faculty to judge of its proper status among the various types and levels of education now recognized.

The conclusion of this report is that though some hospital schools are designated as "professional schools," they do not fit into this designation as is generally defined by higher education. Throughout this book are pertinent and convincing evidences of the need to place Nursing education in colleges or other comparable institutions. One extremely important point is in recruiting, indicating why counselors and parents and the public as a whole would cease diverting young people away from Nursing if the schools were changed. The need for public education is pointed out in the differentiation of functions and areas in order to eliminate the concept of manual work predominately. Nurses themselves have interfered with this advancement by performing satisfactorily all the diverse functions custom has assigned to them and showing a reluctance to accept other people as co-workers. Recent progress has been made in recognition of other workers as well as the need for special preparation for specialized positions among Nursing functions. There is an examination of the various types of existing baccalaureate curricula with weaknesses present. The loose arrangements made by some colleges with hospital schools is noted, indicating an over-emphasis upon degrees as such without sufficient understanding of the content and quality of the education they represent.

Post hospital school supplementary and graduate programs are included in this report. Nursing education on a graduate level does not always represent truly graduate work and there are several kinds of baccalaureate degrees too. The lack of uniformity in graduate programs is deplored as is the same situation in the hospital school but they currently have to meet the needs of Nurses with too wide variations in the basic course to permit uniformity of the graduate course just yet.

Finally the problems are reviewed including contributions possible by practical Nurses. Hospital schools are declared unreliable as a source of staff Nurse supply since they vary so much in quality and have such a predominantly apprenticeship nature as to delay the educational process. They do not provide ade-

quate foundations for specialization and advancement professionally. This study does not feel the affiliation programs consisting of two years of college followed by the same diploma programs is a solution to improving Nursing competence.

Hospital administrators, physicians, health and welfare organizations, educators, and Nurses themselves, are urged to work together in the reorganization of Nursing education in order to win the American public. The colleges and universities will also need to eliminate the weaknesses in their curricula in order to prepare qualified personnel and in sufficient numbers.

EDITH MORGAN.

Carothers, J. C., THE AFRICAN MIND IN HEALTH AND DISEASE. A Study in Ethnopsychiatry. [Geneva: World Health Organization Monograph Series, 1953. Pp. 177.]

This book, by an English psychiatrist who has spent much time in Africa, is a thoughtful and stimulating study. The monograph begins with a brief description of the physical anthropology of Africa and a description of the African environment—and environment favorable to disease and the development of parasitism. Since it is to the disadvantage of both the host and the parasite that the host die, evolution is toward a tolerance for parasites, and the tolerance which the Negro has developed for the plasmodium, the hookworm and the roundworm for example, is beyond that of the white race. Yet infestations and malnutrition are important factors limiting the efficiency of the native populations in Africa.

Certain cultural factors are general in native Africa, such as the initiation ceremonies which mark explicitly and symbolically the transition from childhood to maturity. Song and dance are widely developed and there is much extemporization. The plastic and graphic arts play but a minor role. Toys other than those made by the children themselves are conspicuous by their absence. Specialization of knowledge hardly exists, for the common tribal knowledge is available to all.

In infancy, from birth and for two or three years, the mothers affection is whole-heartedly concentrated on the child, and he is treated with the utmost indulgence. The blissful period is brought to an end at the time of his weaning with a disturbing abruptness.

Patterns of behavior are taught in a concrete fashion. Particular duties are owed to particular people. Truth, justice, right and wrong in any general sense are unrecognized. Cause and effect are confused, and the question "Why?" is always answered in magical and animistic terms which do not permit of further speculation. Childish curiosity is thus stifled early, and the lack of suitable play materials gives little opportunity for the development of manipulative skill or mechanical ingenuity. The community is controlled by concrete codes of obligations enforced by public opinion. There are little in the way of abstractions concerning behavior to be carried over into a new situation when the African becomes "detribalized."

Carothers considers the studies of brain morphology, which indicate that the brain of the African Negro averages slightly (152 grams) lighter than that of Europeans. There are other statistical differences including electroencephalographic ones which, while interesting, shed little light at present on the significant problems. It is pointed out that some primitive groups such as the Neanderthals had mean cranial capacities greater than that of modern man.

Carothers considers that, in comparison with the European, the personality of the native African is characterized by a failure to see an event as an element in a total situation, and as having a variety of relevant relations, by a tendency to follow routines in an unreasoning fashion and by a lack of interest and attention unless the situation appeals in a directly personal and emotional fashion.

Satisfactory statistics on the comparative incidence of mental illness in the African native and the European are not available, but such as are available suggest a much lower incidence in the African.

It would appear that the incidence is much higher in detribalized natives than in those still in their tribal surroundings. This, plus the high rate of mental illness shown by Negroes in America gives grounds for thinking that psychotic incidence in Africans is related to deculturation. Epilepsy seems to be common throughout Africa. "Frenzied anxiety"—a transient but dangerous state—is a not infrequent

occurrence. Schizophrenia is relatively common, and is likely to be amorphous. Although persecutory delusions are common, well-organized paranoid psychoses are uncommon except among the more educated Africans. Depressions appear to be rare. Suicides are about a tenth as frequent as in England or the U.S. but homicides are common. Fear of witchcraft seems to occupy the place of guilt in Western culture. Hysteria is common. Clearly marked obsessional neuroses are rare, but the rituals used as a defense against fear of witchcraft have much of an obsessional character, although they are social rather than individual phenomena.

Carothers is struck by resemblances between the normal native African and the lobotomized European and suggests a relative idleness of the frontal lobes in the normal primitive African. He believes this hypothetical relative idleness of the frontal lobes to be of cultural origin.

R. L. JENKINS.

Carrington, Hereward and Fordor, Nandor. HAUNTED PEOPLE. [New York: E. P. Dutton & Co., Inc., 1951. Pp. 225. $3.50.]

This book which purports to be the story of poltergeists down the centuries is written in two parts. The first section by Carrington is essentially a thumbnail history of the subject, beginning with a description of cases where bells are rung, objects are thrown about, etc. by invisible spirits. He criticizes notions that these manifestations can be explained as a result of natural actions and concludes "Poltergeist phenomena represent, of course, spontaneous outbreaks of uncontrolled telekinetic phenomena . . ." The "of course" in the above sentence leaves no room for argument.

Having solved the problem of etiology conclusively—at least in his own mind—he moves to a description of factors in the phenomena, including the slowness of motion frequently observed, the fact that objects move in a curved path, and that they frequently appear to be unduly warm or even hot. Such objects also are occasionally marked and are often thrown from empty rooms. The author believes "certainly some intelligence is at work" and he goes on by reporting cases to show that this intelligence, whatever it may be, is parapsychological, to say the least.

Carrington quotes a number of ancient authors and eventually comes up with the fact that there are at least 375 cases of authentic manifestation. He believes there are probably many thousands of such cases unreported, and feels that while these phenomena are purposeful, they still remain a mystery in all areas.

Having given us this somewhat superficial summary, the author next presents a long list of case summaries, beginning with one in 355 A.D., and working up to 1949. In these 375 cases the author feels that most of them have been unexplained and that the evidence in many of them is "exceedingly striking." He also gives a little longer discussion of three cases.

This section of the text gives a fair survey for a beginning student. Theoretically it yields little of value except a confirmation of the notion that nobody seems to know much about this phenomena, and that the author inclines toward a belief in a paranormal etiology.

The second half of the book is somewhat more confusing. Fodor begins with a case history in which he attempts to work over the Saragossa Ghost and concludes that its failure to establish its identity with someone deceased "speaks in favor of a schizophrenic dissociation" of the servant girl who was originally accused of being "an unconscious ventriloquist." Either solution, it would seem, certainly adds meaning to his final opinion that these hypotheses leave many problems unsolved.

He next moves into a theoretical discussion of the psychoanalytic approach to occultism in general, giving some superficial information on poltergeists, together with a psychiatric evaluation of a woman who produced most amazing phenomena, who was later revealed to be a fake and who eventually developed a remarkable collection of hysterical manifestations. The study is of some interest in showing why some people behave as they do and as such is intriguing psychiatry, but does not answer the question of the actual mechanisms of function in the production of physical phenomena.

The next case, The Bell Witch, is again of interest for people who like this sort of thing,

and contains all sorts of exploratory theories, none of which really explain more than the psychological factors underlying the behavior patterns of the participants. The concluding case, the Talking Mongoose, is one which Fodor investigated at great length and one which completely confuses this reader, since it is to date unsolved and unexplained. This leaves one with a sort of dissatisfied feeling which is expected in books on occult mysteries, but hardly is usual in alleged scientific discussion. The last chapter, "The Poltergeist—Psychoanalyzed" is reprinted from a previous article and describes the author's notion that such phenomena are real but are not supernatural, rather being manifestations of temporary schizophrenic mental disorder. He presents a case to support his theory, but here again all we get is an analytic evaluation of the patient and no answer to Carrington's earlier questions on why poltergeist phenomena function as they do.

The two halves of the book are apparently unrelated and instead of really helping to clarify the subject, tend to confuse it thoroughly. Probably the best solution is to accept the fact that nobody, and this includes these two authors, understands the problem and that this book represents only the authors' hypotheses to explain the bases of poltergeist activity. From this view the book, considered as a series of interesting anecdotes, becomes interesting reading. If scientific psychiatric evaluations are anticipated, however, the reader will be sorely disappointed.

DOUGLAS M. KELLEY.

Cobb, Stanley. FOUNDATIONS OF NEUROPSYCHIATRY. Fifth edition. [Baltimore: Williams & Wilkins Company, 1952. Pp. ix + 287. $3.00.]

This is the fifth edition of a text first appearing in 1936 and bringing the advances in neurology and psychiatry of the last four years into its structure. Many of the original chapters have been rewritten and some actual chapters added. The format of the book has been maintained, however, and the purpose of the author to present important principles simplified and schematized has been maintained. The author has adhered to those principles which are fairly well established, discussing only those anatomical structures the physiology of which is known for which there is a fairly well sustained correlation. There is an introduction—a brief current survey of the anatomy, physiology and pathology leading up to a description of the principal disease entities. Here too the author attempts to define problems of neurology and psychiatry, and the interrelationships between these and other basic sciences.

He next moves to general anatomy and physiology and in this chapter yields to the temptation to add to the text the newer concepts of reverberating circuits. He next runs through the usual discussions of the autonomic nervous system, adding a bit of Selye's work, and then takes up the cerebro-spinal nervous system. Motor integration and locomotion and functional localization in the cerebral cortex are subsequently considered, and following this consciousness and "mind-body" problems are discussed. Cerebral circulation and spinal fluid complete the anatomy and physiology section, and the rest of the text is devoted to problems of neuropathology, general and specific. Under these headings short synopses of major pathological conditions are discussed, and simple techniques described.

There is also a whole chapter on epilepsy, and finally, psychological concepts in medicine, including instincts, intelligence, activity, memory, repression, attention processes, reason, intuition, the emotions and phantasies and dreams are covered in 25 pages. Obviously, the coverage is meager, and unfortunately much of the discussion in this section is most superficial.

This last evaluation is of course the fundamental problem of the potential use of the entire text. Used as a purely introductory work, it may well serve especially in the anatomy and physiological section as an approach to achieve superficial acquaintance with the field. It is easy to read and filled with simple diagrams and excellent illustrative cases. It is, however, only a book for beginners, and the expert will at times be perplexed with the apparent oversimplification. The author, obviously aware of this problem, has limited his goal and has achieved reasonably well his desired endpoint.

DOUGLAS M. KELLEY

Delmas-Marsalet, P., EXPLORATION FONCTIONELLE DU MUSCLE STRIÉ HUMAIN, NORMAL ET PATHOLOGIQUE. Ballière; Paris, 1952, pp. 223.

In this important monograph the author, a well-known neuropsychiatrist who has already published valuable neurophysiological studies, shows what interesting data can be obtained, by the exercise of a little ingenuity and intelligence, from the myograph, an instrument nowadays usually relegated to the museum except for its use in elementary courses of neurophysiology.

The author has developed an interesting method of distinguishing the tonic from the clonic contraction of muscle. This method he calls the analytic myography; the classical myograph he calls synthetic. The first 76 pages of the monograph are concerned with the description of experiments tending to establish this distinction.

Chapter IV is concerned with the use of the analytical method for the study of muscular contraction in the normal striated muscle of the intact human being. In these studies the author uses what he calls the method of local pharmacologic retardation; various drugs are dissolved in a hypertonic solution of polyvinylpyrrolidone and injected directly into the muscle to be examined.

Chapter V gives applications of these methods for clinical diagnosis and treatment of various muscular disorders in man. Chapter VI discusses the implications of the foregoing experiments for the physiology of muscle. A description is then given of the technics used, for the benefit of anyone who wishes to use them in the clinic or for the control of the data utilized in this monograph.

As the result of his extensive experience with more than 10,000 myographs the author arrives at the following conclusion:

1. The systematic study of human striated muscle by the myographic method reveals a certain number of facts which are opposed to the classical ideas, of which the longevity is at least surprising. Such is, for example, the pretended inexcitability of striated muscle by prolonged galvanic current which may be from now on considered false. It is possible that many of the dubious teachings of traditional physiology are due to the fact that classical experimentation seems to have been dominated by two factors:

i. The study of isolated striated muscle separated from its nervous and vascular connections;

ii. The importance accorded to the notion of threshold stimulation and the study of its variations.

2. Investigation of muscular physiology made on man has the advantage of exploring a muscle of which the vacular and nervous connections are conserved. The myographic registration of its contracting necessitates currents which are well above the classical thresholds but which for this reason correspond with the real activity of human muscle and not to an activity which one could qualify as "laboratory activity."

3. The diversity of "experiments" offered by the clinic constitutes a vast field for exploration. This field has been extended by the use of the method of "local pharmacodynamic retardation of striated muscle."

4. The possibility of obtaining a pure tonic contraction of striated muscle by utilizing trapezoidal galvanic currents; the ability superimposed on this sustained tonic activity, and intermittent clonic activity, constitute the foundations of this new myography that has been designated "analytic myography."

5. Thanks to "analytic myography" it has been possible to discover the "laws of summits," an important law establishing the common myofibrillary substratum of tonic and clonic activity and the close collaboration which exists between these two modes of activity. Thanks to the law of summits it has been easy to seize the importance of muscular electrotonic phenomena as the mechanism of polar variations of the clonicogenic excitability, of tonicogenic excitability, and of muscular tonus.

6. Thus defined, analytic myography combined with our method of local pharmacodynamic retardation of striated muscle, constitutes a "new physiological methodology" of which this work demonstrates the great interest.

7. Thanks to the "analytic myography" it has been possible to clear up certain obscurities of ordinary myography called "synthetic myography" and to draw from them more data than formerly.

8. On these three bases analytic myography, synthetic myography and local pharmacodynamic retardation of striated muscle, it has been possible to study most muscular and nervous affections. Above all, it has been possible to establish pharmacodynamic effects of undoubted practical utility and evident therapeutic usefulness.

9. In the domain of pure psychology the "analytic myography" and the "local pharmacodynamic retardation" have permitted the study of various important problems; clonic excitability of striated muscle and its polar variations; tonicogenic excitability and its laws; electrotonic variations of tonus and its measure; electrotonic subordinations; chemical subordination; electrotonic mechanism of tonic and clonic contraction, as well as tonus; the special nature of the activity of striated muscle called "rhythmogenic."

10. Of all the effects observed, there has been derived an electrotonic conception of muscular functioning which gives a simple account of the principle properties of striated muscle.

11. From an anatomical point of view analytic myography permits one to suspect in striated muscle the existence of myofibrillae of three kinds tending toward certain differentiations, meanwhile conserving their fundamental tonicoclonic ambivalence.

12. Finally, it has been possible to draw nearer together the opposed doctrines of the physiological schools at Cambridge and at the Sorbonne and perhaps also to put an end to the quarrel between the alphas and the gammas.

It seems certain that analytic myography constitutes an important method of investigation, in some ways superior to the electromyography. The combination of the two methods will perhaps be useful in the future. There seems little doubt that the patient study of muscle by M. Delmas-Marsalet will arouse great interest on the part of all those who are interested in the physiology of muscle and we shall await with great interest the reaction of physiologists to his important contribution.

PERCIVAL BAILEY.

Dollard, John; Auld, Frand; and White, Alice Marsden, STEPS IN PSYCHOTHERAPY: STUDY OF A CASE OF SEX-FEAR CONFLICT [New York: The MacMillan Co., 1953. Pp. IX + 222. $3.50.]

This is the last, as well as the latest, product of the Institute of Human Relations, Yale University. The volume offers seventeen hours of a therapeutic case in which the authors "try to show the steps in the development of the case with a view to defining new units of analysis." An even more important point is made in that aspects of the training of an apprentice psychotherapist are illuminated and discussed.

The therapist was a N. Y. pyschiatrist with a good clinical background, with no personal psychoanalysis and plenty of experience in general psychotherapy. Prof. Dollard supervised the case treatment. Interviews were sound recorded. The volume consists then of the record of interviews and a running comment of the supervisory sessions held at periodic intervals. The aim was "brief therapy" and centered on the patient's immediate problems. Freudian basic theory was used, but dreams and early memoiries (or their recovery) were little used.

The authors' therapeutic techniques were based on theory advanced by Dollard and Miller, and consists of a fusion of reinforcement learning theory and psychoanalysis. Any attempt to give accurate verbatim reportings of therapeutic and supervisory sessions can only be welcomed by all those interested in learning the "What" and the "How" of therapy. Here is an objective report that each reader can evaluate and study at his leisure and for his own purposes. One does not necessarily have to agree either with the basic theories or the techniques to profit by such a piece of work. The curse of psychiatry and psychotherapy is that it doesn't easily lend itself to such evaluations and study.

The last part of the volume gives the reports of the psychological tests of the patient. This small work would be quite valuable in teaching courses and seminars on therapy. The difficulties and pit-falls of therapy are clearly highlighted and the text is clearly and interestingly written.

JOSEPH ZINKIN.

Faris, Robert, E. L., SOCIAL PSYCHOLOGY. [New York: Ronald Press Co., 1952. Pp. VII + 420. $5.00.]

Written as a college text, this book focuses on the areas of fundamental agreement in the field rather than attempt to emphasize any particular school of thought.

Beginning with a discussion of human nature and the social order, the author emphasizes the incompleteness of man apart from social organization. Inadequacy of biological motivation is examined to demonstrate that in the process of interaction in social experience man acquires organization for his behavior. His motivations for activity are individual but the social process transforms him into an efficient creature and responsible member of a team. Social sources canalize "the original generalized need to function into specific preferences, and, in this sense, culture may be said to create motives." Such motivation acquires strength if maintained by institutional forces and such institutional systems later become intertwined with biological needs.

Having demonstrated the importance of the social structure, the author next delves into the problem of the emergence of consciousness and unconsciousness and eventually evolves an interesting discussion on the emergence of self-consciousness in social interaction. He feels the "self is an organization actively created out of material gained by experience in social interaction."

The next approach is to the problem of the social determination of learning, perception and memory and, while the author admits these to be actions of individual preference, he shows that they are subject to so much guidance by social life, that they are to a great extent collective performances. Attitudes and beliefs and abilities are also to a large extent directed by the social organization, and in these first 10 chapters we find the author's basic emphasis toward the molding of the individual's behavior is that the social structure is a major—maybe the most important—essential.

Problems of interaction are next studied, followed by questions of role playing and status, and the author then moves into the field of pathology. He considers some neurotic behavior in terms of special roles or complications of roles and, unfortunately, his discussions are superficial and lacking in real psychiatric understanding. His discussion on personality disorganization includes brain impairment and toxic patterns, and these is a very interesting study on isolation and personality disorganization. This material is considerably more worthwhile than his pseudo-medical contributions.

He concludes with a summary of trends and problems in social psychology, pointing out that the actual emergence of the field of social psychology is relatively recent. Lack of communication between varying disciplines concerned is highlighted as a definite problem, and, finally, the lack of research techniques is stressed. The author believes, however, that the mature period is beginning and that progress may be expected.

DOUGLAS M. KELLEY.

Federn, Paul, EGO PSYCHOLOGY AND THE PSYCHOSES. [New York: Basic Books, Inc., 1952. Pp. 375. $6.00.]

This book is a fitting memorial to the author, an outstanding pupil of Freud and a fine and good man who died in New York in 1950 at the age of seventy-nine. It was indeed an inspired idea to publish a collection of Federn's contributions to ego psychology (a field which he tilled almost alone for many years.) He felt, in spite of Freud's pessimism, that the treatment of the psychotic was far from hopeless. It is due to the real pioneering efforts of Federn, Nunberg, and Fromm-Reichmann that the psychological treatment of psychotics has entered into the active phase, and has been made part of the equipment of the modern psychiatrist. These papers are a real contribution to the practical aspects of the handling of such patients.

Some of Federn's papers are presented here in print for the first time; others have been translated from the German and only now are made available to us in English. In all we have sixteen papers divided into three groups: "On Ego Psychology", "On the Treatment of the Psychoses", and "Narcissism". Dr. Weiss's introduction is very helpful in summarizing Federn's views.

Federn assumes on the basis of his observations and therapy that the "schizophrenic loss of reality consists in a loss of cathexis of the mental and bodily ego boundary." "Loss of

reality is, therefore, the defense of the psychotic portion of the ego and the defeat of the healthy part." The psychosis itself is no defense but a defeat. (p. 188) The regression due to loss of ego cathexis is a regression of thought from reality, a regression of the ego to earlier states of development, and a regression of the conceptual idea to the original single experience. The appearance of unconscious material and mechanisms is also the result of this weakened ego cathexis. Federn offers little to explain etiology, but is far more helpful in revealing the pathogenesis and defenses.

He is emphatic in insisiting that "all psychosis is ego disease." Ego feeling is due to one coherent unifying ego cathexis. He uses his theoretical formulations in several excellent papers in which he carefully studies the phenomena of estrangement and depersonalization.

The papers on treatment are useful, practical, and conservative. He strongly advocates re-repression in the usual case which is treated on an ambulatory basis. Nonetheless he is frank to admit that "Fromm-Reichmann's technique (which is not based on re-repression) is the best psychoanalytical method so used up to the present time." But then most of her cases are treated in a hospital setting and only very much later on an ambulatory basis.

In short, we can only congratulate the editor and publishers for giving us a "basis classic in psychiatry", for making Federn's work easily available, and for giving it a handsome, well-printed presentation. There is a complete bibliography of Federn's published work, and an adequate index.

JOSEPH ZINKIN.

Ferguson, Leonard, W., PERSONALITY MEASUREMENT. [New York: McGraw-Hill, 1952. Pp. XV + 457. $6.00.]

The author has approached the problems of evaluating techniques of personality measurement by bringing together an account of the major methods by which personality tests have been constructed. He starts with the premise that there are three objectives to be gained by the measurement of personality: "They are the better understanding of individual behavior, the better understanding of group behavior, and the better understanding of the interactions between individual and group behavior."

He first approaches the problem of individual behavior, showing how personality inventories, marital evaluations and vocational success can be utilized, and then moves into problems of group behavior, mentioning the work of Leighton, Kluckholn and others. Group interaction is next taken up, and the author then proceeds to a study of the determinants of personality culture. Here he discusses constitutional, group, role and situational determinants in simple survey fashion.

Having lined up his goals, his next process is an empirical approach to interest, and here the Strong technique is generally discussed. In the subsequent chapter, "A Rational Approach to Interest," Kuder's method is developed, and their difference, Strong's approach as empirical and Kuder's approach as rational, comes in for considerable discussion. The author would recommend the use of both techniques as part of a complete program.

He now moves to a discussion of attitudes, working through Thurstone's methods, and generally progressing through the field of factor analysis, leading to methods for developing similar scales. The Likert technique comes in for a bit of evaluation, and the author concludes that the Thurstone method is probably preferable.

Approaches to personality are next taken up, and the author rightly stresses that there are an extraordinarily large number of psychological tests which are supposed to measure it. He classifies personality tests into unidimensional and multidimensional approaches: the former being those in which one trait is defined or only one test score is secured. The second group leads to several scores from the same set of items. Examples of unidimensional approaches given include Woodworth's Personal Data Sheet, the Colgate Mental Hygiene Test, Allports' Ascendance-Submission Reaction Study, Thurstones' Personality Schedule, Bernreuter's Self-Sufficiency Test, and Terman and Miles Masculinity-Femininity Test. Discussion of these techniques is primarily taken from the literature with occasional evaluations by the author.

Multidimensional personality approaches include the Personality Inventory, which comes in for considerable criticism; the Personal Audit of Adams and Lepley; the Minnesota Person-

ality Scale; the Guilford Inventories; and the Allport-Vernon Study of Values. In all these techniques the development of the test, its general applications and, most important, brief critical evaluations are undertaken.

The author next discusses the problem of adjustment, again studying inventories including the Bell and Minnesota and, under adjustment prognosis, evaluates the work of Burgess and Cottrell. Terman's study of marital happiness is very carefully surveyed, and the personnel inventory and Aptitude Index are briefly mentioned.

Non-analytical approaches to personnel rating are next taken up, and this chapter represents an excellent study in the problem of ratings and comparisons. Analytical approaches to ratings are considered to involve forced-choice techniques and the special studies undertaken by the Life Office Management Association. These two chapters are quite complete, and represent much more of the author and his thinking than do other summations previously presented.

Perceptual approaches are considered to include projective techniques, following the theory of Klopfer and Kelley, and this chapter is a fair summary of their work. Reliability and validity studies are also studied. The Thematic Apperception Test is listed as an imaginal approach, and is given a chapter by itself. Observational approaches to performance, such as frustration techniques, are next considered, followed by a discussion of experimental approaches including the work of Eysenck, Harrington, Barker and Sears.

In his final evaluation and summary, the author boils down all of the chapters into a paragraph apiece, and produces as a result a neat and short analysis of the methods enumerated. He feels, in his seven measurement rubrics, that he has discussed over 250 identifiable personality traits and believes that the methods of measurement are unfortunately not comparable to each other. He finds considerable lack of correlation between different instruments designed to measure the same trait, and suggests that the whole problem is exceedingly complex and fraught with pitfalls. He has accomplished his basic problem: that is, to explain the major methodologies used in personality test construction, and for the beginning student has developed an excellent text. As a matter of fact, since most workers in these fields are primarily familiar with only one area, his text presents a ready introduction for the expert that he may develop an awareness of the assorted facets and varied approaches in this exceedingly complicated field.

DOUGLAS M. KELLEY.

French, Thomas, M., THE INTEGRATION OF BEHAVIOR: Volume 1, Basic Postulates. [Chicago: The University of Chicago Press, 1952. Pp. XI + 270. $5.00.]

This is the first volume of a projected five-volume work by Doctor French, Associate Director of the Chicago Institute of Psychoanalysis and a well-known name in American psychiatric and analytic circles. In this present volume, the author undertakes to construct a picture of the integration of behavior, and of its integrative apparatus. He has attempted to check his construction against the clinical data of a case history studied over a period of two years while the patient was under analysis. He therefore attempts a study of the process of integration of behavior by the detailed analysis of the thoughts and acts of one person under treatment.

It is in this first volume of a larger project that he starts with the "commonsense notions" of motivations and insights. He assumes as his working hypothesis "that rational behavior, neurosis and dreams have much in common and that in irrational behavior we should find fragments of the integrative mechanism that we must postulate to account for rational behavior". In a second volume, he will study more intensively the integration process in dreams and how a person's dreams are related to each other and to the structure of the personality. In a third volume, he intends to take up the study of the pattern's of the patient's behavior and change in behavior from day to day, and over longer periods as the result of therapy and other factors and events. The final two volumes will return to the problem of analyzing behavior into its components and their reconstruction in integration which will involve the question of early memory and inherited mechanisms. This is a bold, imaginative (and if successful) an extremely important work in the field of ego psychology now coming more

and more prominently to the fore in the work of psychoanalysts, sociologists and others.

It is extremely difficult to judge or evaluate this volume since it is but a truncated part of a whole. It would be the better part of wisdom and prudence to withhold all such judgments until we have the entire work before us. This first volume is an endeavor to begin to use clinical data as an effective check on assumptions that we make in attempting to interpret such data (and not only to the patient as "interpretation" in the course of treatment). If the ego is operative at all it must operate in dreams, in neurosis, in waking behavior, in rational as well as irrational behavior. The mechanism or apparatus must be a pervasive one. Its fragmentation for theoretical purposes or for research is a mere incident of methedology, not an inherent aspect of the apparatus or ego. French tries to maintain an unbiased and critical attitude toward psychoanalytic theory and particularly towards its deeper biological implications (page 103) and to eventually examine these implications in the light of clinical date. If the determinants of behavior are motivation and insight—heretofore, psychoaalysis has concerned itself (of necessity) with motivation; we are now ready to turn to explore the guiding function of insight. Instead of "ego" French prefers to speak of "integrative mechanism." This is perhaps broader, less cliché, less school-bound, and even more acceptable to those who feel that the narrow constraint of a freudean terminology, commits them, of necessity, to more than they bargained for.

Not to continue to attempt a detailed analysis of this work in these pages, we will merely mention a few of the highly interesting points which the author makes. He is at pains to demonstrate (and often very beautifully) the concept that dreams have a problem-solving; e.g. an ego-function beside the more commonly accepted id-function. Thus, he feels there must be a close parallel between dream-work and perception and fantasy in waking life. "Thus in dreams as in waking life, the wish-fulfilling fantasy seeks supplementation by impressions from recent real situation". "Since an integrative field is polarized between reality and fantasy", both contribute to it integrative capacity. All three factors—dreams, neurosis, rational behavior have common components. They are understandable as variations. The picture of the basic common pattern is outlined here. He uses the method of "successive approximations" and builds up his thesis step by step. The volume is highly instructive, clearly stated and carefully worked out. It requires a close and serious reading, and must be considered a major attempt to build the foundations of a thorough-going ego psychology on the basis of a few very fundamental but sound principles first worked out by Freud himself. One can only await with impatience, the other parts of this work. We are certain to hear more of it in the not too distant future. It will repay the attention of all schools of psychiatry or analysis. This book is not meant as a species of partisan pleading.

JOSEPH ZINKIN.

Frosch, John, (Ed.), THE ANNUAL SURVEY OF PSYCHOANALYSIS. [New York: International Universities Press, Inc., 1952. Pp. XVI + 556. $10.00.]

This bulky volume, thicker to look at than to read since it actually has a little more than 500 pages of text, purports to be a survey of psychoanalytic literature of 1950. The editors were forced to limit the total field, but have added a bit of peripheral and controversial material. Working with scissors, paste and red ink pens, they dissected and re-built these publications without criticism, and then passed on their production to three consulting editors for approval and opinion. These editors state:

> . . . Reading over the material, we find an extraordinary quantity of matter, good, bad and indifferent —but published. We find articles reviewed of whose existence we had no inkling, and since foreign language publications have been included, it is very probable that no single individual has read all through every book and article summarized in these re-woven condensation. We find that the reading of familiar articles, a quasi-reading, brings out some things we had missed, directs our attention back to the article or book for real rereading, and sometimes puts the material into a helpful context. In other instances, we know pretty well that we do not need to read a particular article or book, and we wonder why certain things were published in the first place. Certainly after years of analytic reading, we all have our favorite authors, and we have also learned which ones not to read. Art is long, life short and most analytic writers not too economic of our time and life as readers. Perhaps the Survey will save us some of this valuable time, or reduce its expenditure to a minimum.

This conclusion, which is well put, summarizes the structure of the book, and stresses its real value as a time-saving technique. Certainly from simply thumbing through the volume, anyone interested in the field, unless he has nothing else to do, must admit defeat in an attempt to survey all this literature. As a matter of fact, the editors of each section should be congratulated in simply being able to stagger through the material, and it is hoped that the process will continue in years to come.

The first section deals with history, including biographical and historical surveys, and is typical of the development throughout the book. Individual authors and their papers are named, and in the bibliography located by reference and are then briefly summarized. The summary will, of course, reflect to some degree the feelings of pertinent emphasis on the part of the reviewer, but careful scrutiny of random papers checked against original indicates a high degree of validity between the summaries and the original itself in all cases. This means that one can then read the brief epitomy and get the heart of the discussion without too much time expense. Obviously, if interest is stimulated, the original can be sought out.

The editors do give vent to their own notions in a short evaluation at the end of each chapter in what they call a summary. Here they estimate according to their basic attitudes what is most important and its place in current patterns.

This technique is carried out throughout the rest of the book, and following the chapter on History comes one on Critique. Methodology is next discussed, and here the editors point out that in 1950 there was no thorough-going, exhaustive analysis of psychoanalytic method. Psychoanalytic studies in development, however, show considerable published activity in a wide variety of areas. The chapter on Ego Psychology, along with the developmental studies in the opinion of the editor, confirms the observation that psychoanalysis is emerging as the basis of a general theory of psychology.

Turning from theory to observation, the chapter on Clinical Studies and the relation of psychoanalysis and psychosomatic medicine show current expansive trends; while analysis and psychoanalytic therapy are next discussed at considerable length and then Applied Psychoanalysis is considered from the viewpoints of anthropology, religion, mythology, folk tales and folk ways, sociology, arts and esthetics. A short section on Psychoanalytic Training concludes this part of the text.

The last section of more than 100 pages represents a survey of psychoanalytic books. Twelve titles are evaluated rather thoroughly, and the editors point out that collected papers, subsequent editions and others not primarily psychoanalytic in scope and interest were omitted. A list of all psychoanalytic publications is included, together with a list of contributors and a 231-item bibliography. There is also an excellent index.

Taken as a whole, this volume probably represents one of the best attempts to produce in condensed form a digest of an extensive field. As the review editors emphasized, much of the material probably should not have been published, but the selection of what is useful or worthless is at least left up to the reader—a technique noticeably lacking in many current survey volumes. Careful perusal of this volume will certainly bring one up to date in the field, and if, subsequent editions appear, should keep one in the forefront of this area of psychiatry. It should be stressed, however, that this is the literature of 1950, and the authors publishing in that year presume, in most instances, previous knowledge on the part of the reader. The book, like the literature, therefore is certainly not easy for the beginner but is definitely directed at the expert and, after all, it is the expert who will be most interested in this sort of time-saving device.

DOUGLAS M. KELLEY.

Greco, Marshall, C., GROUP LIFE. [New York: Philosophical Library, 1950. Pp. XVI + 357. $4.75.]

The author in his Preface hopes that this volume will introduce "an idea that will change the meaning of social and personality conflicts as radically as did Freud's." His "basic premise" is "that the current group life is the ultimate, that any tendency must be traced to this totality." For example, in considering a neurotic, he is not concerned with the weaknesses of the person but rather with "those group forces which, when they meet at the point represented by our subject, effect what is called a neurosis." He feels that a symptom

is actually an effective solution with utility value and believes that "if what we say in this book is correct, then within a decade many of the tools and techniques currently used by the practical clinicians will hardly enjoy a professional status." This new approach will also apparently revolutionize therapy and diagnosis.

The author further assumes that the introduction of his new approach will be fraught with considerable difficulty. He claims to have written for the lay reader, and has prepared the book in such a way that each chapter is complete within itself so that failure to comprehend one chapter will not in any way preclude a reader's attacking the next. This would be a nice technique if it only worked.

He begins with what is called "an overview," a somewhat meandering outline of Marxist dominated political group thinking. Greco suggests that while it appears that he utilizes a Gestalt approach, actually there is a difference in that the Gestalt worker insists upon segregating wholes while he "believes the answer lies in the concept of the indivisible whole." This chapter seems somewhat beyond the technical skill of the average reader, and by this time we are happy to know that the next chapter can be read anyway.

The nature and meaning of geneticism from a sort of philosophical viewpoint is next considered, and leads into "the group life approach." Here the author stresses that a neurotic symptom is brought about by "meeting a phase of one's group settings in terms of only a small part of oneself in order to preserve another social element."

Having delineated the cause of neurosis, he next moves to problems of motivation and presents his social context theory. Throughout he stresses the need to apply to group life the Gestalt views applied in the past to inner individual life. As examples he discusses the significance of childhood experiences and habit with case histories, emphasizing primarily problems of homosexual development. He also discusses the problem of neurotic stability, persisting reactions, hostility, defense mechanisms and other processes.

The latter part of the book deals with psychotherapy in which he summarizes various types of therapy, outlining his "new orientation" as a method in which the "therapist continues to satisfy actual client needs, needs related to the current group setting and not necessarily peculiar to the abnormal." The therapist may go beyond the confines of the interviewing room for resources, and overcome the reasons for the neurotic display by providing new social configurations. In this new configuration "current group forces are not in conflict, hence making it unnecessary for the client to resort to defense mechanisms."

The author discusses treatment in a private setting, giving some case histories which would seem to suggest that this earth-shaking approach consists primarily in some listening together with forgetting the basic problem and being concerned with providing a substitute for some of the client's current need outlets." Greco feels the therapist's chief difficulty is his limited capacity to provide enough assets or avenues, and suggests to achieve this the therapist "must get acquainted, increasing his social significance." He holds that the "development of a private psychological practice is largely synonymous with the development of a directory of community resources." He helps his clients form clubs and groups, visits their homes for dinner and works out projects for entire families. He prepares "programs of community action" and, in general, churns up to the environment in a fascinating fashion.

He concludes his text with some comments on the role of a psychologist in a church setting, and industrial counselling, together with a series of notes, bibliographies and an index.

The book is of interest, if only to suggest what can be done when an enthusiastic armchair amateur takes off into theory. Nowhere does he substantiate his results, follow-up findings are non-existent, case histories are sufficiently brief to be meaningless. The spectacular hypothesis which threatens to revolutionize psychiatric thinking boils down to a focus on the environment rather than the person, with transformation of the therapist into a sort of ring master who "cures" the patient by enveloping him in a veritable circus of activity causing the patient to lose his symptoms in the resultant confusion. This reviewer is in total agreement with the statement in the Preface that "There is no easy road to the introduction of an idea"

—I would add, this particular idea will find the road ahead very very tough.

DOUGLAS M. KELLEY.

Guttmacher, Manfred, S., M.D. and Weihofen, Henry, PSYCHIATRY AND THE LAW. [New York: W. W. Norton and Co., Pp. VIII + 476. $7.50.]

A psychiatrist (who is Chief Medical Officer, Supreme Bench of Baltimore) and a lawyer (who is a Professor of Law, University of New Mexico) have joined efforts to provide a guide through the wilderness of the problems of legal psychiatry. Both professional groups stand in very dire need of a serious and enlightened discussion of their mutual aims, differences, and possible solutions to the complicated overlapping areas of forensic psychiatry.

The first chapter of "The Place of Psychiatry in the Law" serves as an introductory essay on the contributions of psychiatry and underscores the thesis that these contributions must be made "within the framework of existing legal principles." Any and all changes and improvements which are so sorely needed must be made within this framework which is itself influenced by the changing psychiatric knowledge. This chapter is important reading for the psychiatrist who is inclined to wish sweeping reforms in courtroom practices and legal concepts. Care must be taken not to empty out the baby with the bath water.

The second chapter on "Personality Formation" is of primary interest to the lawyer and will serve to orient him in moder psychiatric concepts of personality development. Other chapters (of less interest to the medical man) discuss the various types of mental illness. In these chapters both authors illustrate the problems with legal cases and problems.

Chapters nine to nineteen come to grips with the critical questions arising between psychiatrists and jurists. The thorny and frustrating question of the "expert witness", the treatment of the criminal who is insane, the expert on the witness stand, mental incompetency, veracity, mental disorder and the criminal law are all carefully discussed in a fair, reasonable, and thoroughly enlightened manner. The recommendations of the authors are cautious and favor existing legal practices for the most part. They do not call for extreme and extravagant reforms. This may not quite satisfy most psychiatric readers. The Law makes haste slowly, and perhaps it is just as well. We, as psychiatrists, are not nearly ready to ask that the question of mental disease and its legal problems be passed over to us. Yet the authors are quite in agreement with most psychiatrists that the question of determining sanity or insanity is best resolved in the hands of a psychiatric board rather than by judge and jury.

The volume is clearly written, well printed and will repay careful reading. Too many psychiatrists have singularly hazy notions of the forensic aspects of their specialty.

JOSEPH ZINKIN.

Hamby, W. B., INTRACRANIAL ANEURYSMS. [Springfield: Chas. C. Thomas, 1952. Pp. 564, 193 illustrations. $14.25.]

Here, in one volume, may be found for the first time, a complete and exhaustive discussion of intracranial aneurysms. The wide personal experience of the author is augmented by well chosen material from the literature on this subject. Even though several monographs treating of this problem have been published previously they are in no way comparable to this work, which treats of all aspects and, at the same time, provides an adequate basis in physiology and pathology for an understanding of the clinical phenomena which result.

Whether Biumi of Milan or Morgagni first described an intracranial aneurysm at autopsy is a moot point but the fact remains that until relatively recently most aneurysms were discovered by the pathologist or incidentally by the surgeon in his intracranial exploration for something else. In recent years accelerated interest in the subject has resulted from the excellent work of Jefferson, Richardson, Hyland, and Dandy. The author estimates that intracranial aneurysms may occur in 0.5 - 1.0% of the general population, and, though this estimate seems somewhat high, it is nonetheless based on a sober but critical evaluation of available data.

The first excellent chapter of this book is, in a sense, a succinct summarizing preview of the remainder of the text. Pertinent physiologic and anatomical material is here presented and the functional pathology of disturbed cerebral circulation clearly summarized. The two fol-

lowing chapters on gross and microscopic pathology and incidence, and on diagnostic facts and procedures and the effects of aneurysmal dilitations on local structures, complete the groundwork for subsequent clinical chapters. Chapter III, which present material pertinent to the clinical and laboratory diagnosis of an aneurysm will appeal particularly to the interest and the medical neurologist who may not be as interested in the technical aspects of surgical therapy as will the surgeon.

The last four clinical chapters of this book are carefully organized and, wherever possible, expanded in the light of the author's extensive personal experience with aneurysmal lesions. The brief analyses of symptoms, stripped of inconsequential data, and the evaluation of symptoms in the light of clinical diagnosis and localization, and subsequent confirmation of the lesion by direct observation, give added interest and value to these chapters. A wealth of prognostic information, most useful to the medical neurologist, is included.

The bibliography is remarkably inclusive and complete and rounds out the value of this work as a permanently useful reference.

This is not a book for continuous reading. It is organized as a reference work and justifies that term. The illustrations, drawings and anatomical plates are plentiful and well selected and this undoubtedly steps up the cost of the volume. The work is a must for neurologists and neurosurgeons, for anyone, as a matter of fact, whose teaching or practice makes a knowledge of intracranial aneurysms essential.

FRANCIS J. BRACELAND, M.D.

Hardy, J. D., Wolff, H. G. and Goodell, H. PAIN SENSATION AND REACTIONS. [Baltimore: Williams & Wilkins Co., 1952. Pp. 435. $6.50.]

During the past two decades it has been convincingly demonstrated that the effective exploration of problems in stimulus-response psychophysiology demand the collaboration of scientifically trained teams. An interdisciplinary approach is necessary to facilitate development of stimulus techniques on the one hand, and to assure valid assessment of responses, on the other hand. The diversified talents of such a team, composed of a physiologist and physicist, a clinician in medical neurology, and a research oriented psycho-physiologist in medicine, have long been focussed on the crucial problem of pain in man. This team has made a carefully controlled series of observations in tightly integrated sequence over the past thirteen years. These form the factual core of *Pain Sensations and Reactions*. It is fortunate that the studies made by Dr. Hardy and his associates at Cornell should finally have been brought together and correlated in one volume. Only in this way could the broadly conceived and evolving patterns of their research methods and thought have been visualized as a unified whole. It is only through the medium of such a book that the superb and useful synthesis of the pain experience, as formulated in the last chapter of this volume, could have been presented in appropriate context. This monograph performs a necessary service supplied neither by the journal literature nor by annual review volumes, in presenting their definitive though perhaps not final statement concerning the pain experience in man.

After two introductory chapters in which the authors review traditional concepts of the pain experience and accepted neuroanatomic and physiologic substrates for that experience, attention is immediately directed toward methods for qualitating as well as quantitating various aspects of the painful stimulus and resultant responses. Chapter III summarizes those criteria which must be met by an adequate and quantifiable noxious stimulus for pain, reviews in critical fashion certain stimuli used prior to this study, and presents in elaborate detail, the technique of eliciting painful responses by thermal radiation, the method of the authors. Instrument designs and calibration techniques are presented. Chapters IV, V, and VI recount in workmanlike fashion a series of studies by the authors and others on the three threshold responses customarily included under 'pain', that is pricking pain, burning pain, and aching pain. In the interests of strictly logical progression it might have been desirable to place chapter IX which is devoted to itch and tickle sensations immediately after Chapter VI. The authors establish that these latter responses are most closely allied to the pain modality and are probably mediated by pain pathways. Chapter VII deals with the important problem of quantifying the intensity of the pain re-

sponse and with the authors' experiments which established that this intensity factor could be reliably quantitated. The resultant "dol" scale which has been used extensively by them in subsequent research is a first rate achievement in the field of human sensory physiology. Whatever the theoretical objections may be to this intensity scale, there can be no question that their results with this quantitative standard have amply justified its exploitation.

Chapter VIII concerns cutaneous hyperalgesia. On the basis of the authors' observations they present a revealing formulation of the nature and probable mechanisms of hyperalgesia.

The second half of this book is devoted to more elusive aspects of the total pain experience, that is to reactions other than threshold appreciation and intensity discrimination. As might be anticipated the route now becomes more devious and the data less rigidly specified except for those on the pharmacodynamics of pain as presented in Chapter XIII. As far as this reviewer is aware, Chapter XIII represents the most comprehensive and well documented elaboration of pharmacological effects on human pain available to date.

The medical neurologist, the neurosurgeon, and the psychiatrist will find Chapter XII stimulating reading. Here the authors review current concepts as well as their own quantitative analyses of the effects of prefrontal lobotomy on pain. It is to be regretted that there are still so few critical data on this aspect of the problem. Dr. Hardy and his associates have published the only pertinent and adequately controlled studies in this field.

The final chapter of this book, as previously mentioned, offers a splendid formulation of the pain experience synthesized from the exhaustive data presented in the body of the book. Every thoughtful physician who is concerned with painful states in his practice will find this chapter an informative source for serious study.

This book is replete with clear and illustrative diagrams and is followed by a comprehensive bibliography of 505 references. In general this is a readable book although early chapters on methodology make slow going for the physician who is relatively unsophisticated in such techniques. In spite of this *Pain Sensations and Reactions* can be recommended without reservation as a valuable and authoritative reference for the internist, the medical neurologist, the general surgeon and more especially the neurosurgeon. This work should likewise be a useful reference for the psychiatrist. Many problems involving pain ultimately become his therapeutic responsibility. This book should serve as an edifying model of admirable clinical research. Initial problems in procedure alone might well have discouraged less resourceful and patient investigators than the authors. In their long years of careful work they have performed a major service for medicine. They, and this volume, should be an inspiration to all research-oriented physicians who continue the quest for discriminative data in human sensory physiology.

F. T. Braceland

Harrower, Molly. Appraising Personality. [New York: W. W. Morton & Company, Inc., 1952. Pp. xvii + 197. $4.00.]

This book is primarily directed towards physicians in order to help them understand somewhat better the role of the clinical psychologist and thereby more competently utilize his findings. The author has recommended it also for all other professional persons or even the interested layman, and the result is a text of beginning value but naturally of no great depth.

The beginning — "What Does a Clinical Psychologist Do?" — demonstrates the structure of the book, which is primarily a conversation between a physician and a psychologist written in friendly but not always realistic language. This sort of style is interesting, but one wishes the author were a novelist as well as an expert psychologist. In spite of these difficulties, however, the chapter does get across pretty well what the psychologist can do, although here the average psychiatrist may take a dim view of the notion that the psychologist is better than he is in diagnosing brain tumors. This, of course, can and does happen with some varieties of psychiatrists, but the trend is a little too all-inclusive in its approach. A typical history of this case of brain tumor is given with a nicely built test summary. A second case of latent schizophrenia in which the psychological findings completely reverse the psychiatric diagnosis next appears, and

these two cases unfortunately make the psychiatric profession look pretty stupid from a diagnostic viewpoint.

The author next discusses the tools of the clinical psychologist, beginning with the projective techniques, giving some pretty fair analogies and attempting to clarify the curious jargon which so often confuses any but the experts in this field. She carries on this point in the third chapter dealing with some common misunderstandings, emphasizing the problems of so-called normality, questions of blind analysis, problems of cooperation between the physician and psychologist and winds up with a definition of a clinical psychologist. Here the author has achieved a really workable approach and this section could well be recommended to many experts in her own field.

The second part of the book introduces various special techniques, starting off with the Rorschach test, giving some of the history and theory in a simple but adequate fashion. Reproduction of blots from the author's parallel series are shown, and the method of gaining information concerning the patient is demonstrated. Techniques of scoring are briefly considered, and the various types of patterns characteristic of different pathological reactions are discussed. These pathological patterns are further evaluated in subsequent discussion, and a comparison of undisturbed and organic patients is presented. Withdrawn and hysterical personalities are briefly depicted and finally, psychotics and neurotics are demonstrated in discussion and by chart. This section should give an uninformed individual a fair notion of the Rorschach technique, although of course the author in simplifying is forced into a cut-and-dried approach which makes her appear more dogmatic than she really is.

The next problem is the question of intelligence, and here we have a general discussion of the Wechsler-Bellevue, with a good description of the problems of age and a qualitative appraisal of the test responses.

Drawings are then studied, and here the description is limited to fairly obvious pathological patterns with a general description of the better known points of this technique.

The Szondi test comes in for a fairly comprehensive review and is illustrated with experimental material. Here again the level of the discussions forces the author to omit a great many of the perplexing problems known to experts, and the result is oversimplified. The last test considered is the sentence completion technique.

Part Three represents a case history of 11 year old male twins, one with epilepsy. Since they look identical, the referring physician feels that it would be fascinating to find out whether or not the psychologist, without prior information, could tell which twin has the epilepsy. The case material is presented and the psychologist, not too surprisingly, is able to detect that Johnny is the patient with the convulsive state. The psychodiagnostic appraisals are presented in detail, and the different characteristics are demonstrably obvious. The second case, dealing with a "backward girl," is presented with data and summary charts, and a problem of schizophrenia and a problem in pain conclude this series. The author winds up the text with a couple of referral forms and an appointment blank, and then re-emphasizes the hazards of oversimplification designedly faced in this text that non-psychologists may know at first hand some of the subject material of clinical psychology.

Evaluation of the book is difficult, since it is obviously not for the expert and it is difficult to appraise a beginner's reaction. It should prove of considerable value, however, to physicians provided they can be inveigled into developing enough basic original interest to begin reading in the first place.

DOUGLAS M. KELLEY.

Karpf, Fay B., THE PSYCHOLOGY AND PSYCHOTHERAPY OF OTTO RANK. [New York: Philosophical Library. 1953, Pp. 114. $3.00]

Rank's historical place in the psychoanalytic movement is at last available to us. His contributions previously failed to receive deserved attention because the German technical notes were difficult to formulate.

The author, Dr. Karpf, is a social psychologist. As a teacher of social research in the '30s, she felt that social workers should undertake psychotherapy with their clients. Where look for guidance as to methodology? She went to the Psychological Center in Paris. There Rank started her personal analysis, later

to be completed in New York when they collaborated in teaching.

Rank early in the Freudian movement had devoted himself to the nonmedical side of psychoanalytic investigation, with encouragement by Freud. Today though, Dr. Karpf complains, the Freudians are training only physicians who intend to specialize in psychoanalysis, whereas others who need basic knowledge of psychodynamics have difficulties with understanding Freudian theory. She refers to general psychiatrists, clinical psychologists, group discussion and group therapy leaders, educators, social and cultural scientists.

Because of wide acquaintance with general thought and culture, Rank could formulate a methodology to satisfy North Americans. His "positive, constructive" philosophy in Dr. Karpf's opinion, is more suitable for this country than Freud's "negative, reductive and closely-knit authoritarian viewpoint." Varied developments linked themselves, directly or indirectly, to Rank's views, among them "short" therapy, "client-centered" therapy, "non-directive" therapy, realtionship-oriented education and group discussion, service-oriented or functional counseling and case work.

The result of Dr. Karpf's exhaustive study is a meaty presentation. Those who will not have an opportunity to read the book may want to know briefly some of Rank's chief departures in psychotherapeutic procedure:

The give-and-take "relationship" of counselor and client determines the therapeutic process. Emphasis is shifted from specific content per se to the dynamics underlying it; pattern of reaction counts more than the reliving of single experiences. Rank's special device of "end-setting" had historical importance in the larger question of activity versus passivity in therapy. He departs radically from the Freudian position in pronouncing "the will" the creative element in therapy. Consequently, "resistance" is not to be undermined as a hindrance to therapy but rather to be "encouraged, strengthened and directed" as "a constructive striving toward independence."

(Dr. Karpf states that old academic psychology, in spite of its recognition of the meaning of conscious willing, could not utilize it because of the lack of the dynamic viewpoint. The latter was supplied by Freud in terms of biologic instinct and by Rank in terms of Creativity). Rank rejected the instinct conception of behavior. He said that instinct was lifted into the ego sphere by conscious will which tames, directs, and controls instinct. Just as the creative will represents the conscious expression of instinct, so emotion represents the conscious awareness of instinct. "Inhibition" in contrast to Freudian "repression" is a basic and increasingly autonomous internal process rather than a secondary and externally imposed factor.

The "psychology of the unconscious" unveils itself as an attempt to deny the will in order to evade conscious responsibility. Will, inhibition and impulse are a triad of organizing principles in certain personality types, with will pre-dominating in the creative type, inhibition in the neurotic type and impulse in the anti-social type. To Rank creative expression is the core of the therapeutic process. He objects to the term "sublimation;" artistic expression is an end in itself and the neurotic the artistic temperament that miscarries and fails to achieve it.

Interdependence of the individual and the social order in which he comes to self-realization is stressed. The mother-child relationship being basic (in contrast to Freud's Oedipus complex), "anxiety," "fear," "relationship," "ending" and "separation" in therapy take on a special significance.

All issues are discussed critically with Freudian theory as a background for comparison. For instance, "Freudian psychology reduces man to a puppet . . . (the individual ego naturally the carrier of higher goals . . . is also the temporal representative of the cosmic primal force no matter whether one calls it sexuality, libido or id.")

Freud and Rank decided together that the birth process was the root of all fear: "that complex of painful feelings, of a discharge of impulses, of physical sensations, which results from danger to life is ever after repeated within us as a condition of fear." Yet why did Freud discard this idea that birth trauma was basic? Was it that stressing the mother-child relationship would threaten the patriarchal structure of Freudian thought? In the latter presumably the father is "a figure of God-like power," "the masculine principle is not only

pre-dominant, but man is made the measure against whom woman is appraised . . . only in terms of negative characteristics." Rank scoffs at the idea of "penis envy" as a general problem of women . . . "an instrument of Man's procreative ideology . . . a conception which could only be advanced from the standpoint of masculine inferiority . . . rooted in man's fear of woman . . . This 'inferiority complex' Freud projected onto woman in order to save the crumbling ideology of his father-ideal . . . feminine psychology distorted, but correspondingly . . . masculine qualities appear exaggerated to the point of caricature in a libidinal superman . . . In Freud's . . . interpretation . . . of the highly individualized psychology of modern neurotics."

Yet while he punched holes in Freud's "system" he showed bias toward the modern neurotic, whom he called "the frustrated artist type." In his exaltation of woman as biologic "creator in reality," whereas man "creates only spiritually in unreality," he proposed artistic creativity as the important outlet for those frustrated. Most of us would go along with "the psychology of difference" in terms of cultural and social change, and with the personal and social value of artistic expression. The neuro-psychiatrist might wish to stress constitutional factors somewhat, being aware that, with ultra-microscopic and electrophysiologic techniques, for instance, researchers have pointed to constitutional differences between so-called normal persons and those who are "oversensitive" or "different." Since these finding are still controversial, we may not dwell on them.

The average neurosis is a "human problem" in the broad sense of development, education and adjustment, but the different diagnosis from more serious disorders has to be cleared. The therapist's knowledge alerts him to the deviations and emergencies which call for medical intervention.

The "individual" whose whole soul cries out to be "different," may "create" havoc in close relationships by his unwillingness or inability to cooperate in life as he finds it. Releasing the neurotic's creativity is only partial therapy. Of course, society as a whole may benefit by such creativity and the tensions of the neurotic with close family and friends may bemitigated. But is this creativity not distorted just as Freud's psychology is "distorted by too much contact with the pathologic in human relations?" And does not this distortion in every aspect of life come partly from constitutional and other differences not defined by the social psychologist?

The reader will be stimulated and inspired to ask other as yet unanswerable questions when reading Dr. Karpf's enlightening book.on Otto Rank. She has done a fine job of orienting the reader toward Rank's important position. The book should be well-received. Any counselor or physician will find it broadening as well as giving a specific point of view which will aid in establishing a therapeutic relationship with patients.

Lindner, Robert, PRESCRIPTION FOR REBELLION. [New York: Rinehart and Co. 1952. Pp. 305.]

Lindner has written a good book that should be widely read. He writes with fervor, in good style, and has a broad background of reading. If he keeps up the pattern, he bids fair to become the Tom Paine of modern psychology. He certainly isn't dull. He is not merely concerned with the stultification of individuals, but with that of societies and cultures as well; their eventual decay, as has been attested by others. He sees the danger to modern society in the formation of mass man and the disappearance of individuality. He says that modern psychology, in the hands of its various practitioners, caters to the bugbear and fallacy of *adjustment,* and he has a good point. The reviewer would add that another bugbear is maturity, so fantastically described in the literature and so difficult to find, notably amongst those who go about preaching maturity, notably their special kind of maturity. But to get back to our author. Lindner feels that all human effort and being are or at least should be directed towards expanding the media in which people live, the equipment they have or can fashion, and the limits to existence. In a chapter labelled, The Lie That Binds, he very well attacks the omnipresent injunction to adjustment. The next chapter heading is Shamans and Shibboleths—these titles give a hint at the useful polemic note that runs through the volume. He doesn't hesitate to take potshots at names well known in professional circles.

As a matter of fact, for the most part, it is not a distinguishing mark to be included in the bibliography. His aptness is illustrated by the following, "Supported by the authority of all institutions, parenthood has come to amount to little more than a campaign against individuality." He feels that, "By nature, man is a rebel." Lindner is not interested, in his use of the word rebel, in so called radicalistic tendencies or revolution. He feels this instinct to be particularly alive in the neuroses and psychoses. The matter of adjustment is examined historically at some length. It is felt that educators, psychiatrists, psychologists, and others could have an important influence in emancipating man if they made the effort and had the courage to do so. He believes the knowledge of psychoanalysis is basic, although he says it has been distorted to attain adjustment instead of emancipation; the knowledge is at hand but it is not used aptly. Rebellion is the alternative to adjustment. The word rebellion is elevated to denote an instinct; although self-correcting, Lindner does extend it enough to crack the very word. There is no objection to considering rebellion as instinctive, but it cannot sustain anything more than the weight of the secondary instincts. Lindner is aware that the problem is not a simple one, although he is compelled to oversimplification in his presentation. The essentials to the training of the child to rebellion are given as, "that he will be *aware, identified* (have a sense of self), *skeptical, responsible, employed* (to convey Octega Y Gasset's concept of wholesale and absolute dedication), and *Tense* (a condition of alertness which recognizes the distance, the gap, between what is and what should be)."

A. N. F.

Loewenstein, Rudolph M. (Ed.) DRIVES, AFFECTS, BEHAVIOR. [New York: International Universities Press, Inc., 1953. Pp. 399, $7.50.]

This volume is a collection of papers offered in honor of Marie Bonaparte "both as a mark of congratulation at an important moment of her life and also as a token of admiration at her achievements." Ernest Jones writes a brief prefatory note to this well-known student, friend, and collaborator of Sigmund Freud who now reaches her sixtieth birthday. There are twenty-one papers included in two sections (theory of psychoanalysis, and clinical contributions) by some very distinguished psychoanalysts among whom we find Hartman, Kris, Loewenstein, Edith Jacobson, Spitz, DeSaussure, Charles Odier, Greenacre, Felix Deutsch, Knight, Flournoy, Anna Freud, K. R. Eissler, Roheim, Grete L. Bibring, D. Burlingham, Lewin, DeGroot, Lagache. It is a rather impressive array of talent, and the papers are nearly all equally impressive.

The paper by the "heavy artillery" of theoretical psychoanalysis consisting of Hartman, Kris, and Loewenstein on "The Function of Theory in Psychoanalysis" is quite obviously in partial rebuttal of some of their colleagues who have been both hostile and timorous in their attitude toward further theoretical advances and consolidations in analysis. The authors feel it necessary to re-enforce the idea that "theory is not a creed, but a tool." They feel that it is, even after Freud, necessary to continue the work of bridging the gap "between the general level of theorizing and the study of concrete phenomena." They take a strong and very legitimate attitude "that psychoanalytic theory constitutes the potential core of a general theory of behavior. . . ." They make the important point that many misunderstandings and dissatisfactions with analytic theory "have been facilitated by looking upon Freud's work as a collection of statements which can be freely combined or interchanged in complete disregard of the time at which they were made." "It must be understood that analytic theory is a coherent set of assumptions, not a hodgepodge of isolated statements of clinical fact or theoretical speculation. The paper is closely reasoned and should clear the air and decrease some resentment.

Charles Odier, the Swiss psychoanalyst, whose work is too little known in this country, gives us an interesting paper on "Sublimitation" based on Marie Bonaparte's published childhood diary. He makes some valuable distinctions in the problems of sublimation. He notes several stages (three) between partial and complete sublimation. The first two involve the influence of environment and a third which corresponds to a state of maturity and depends on the faculties of the ego to "valorize." It is this concept of value that has so

much been lacking from analytic theory and which analysts have for a long time avoided discussing, and which must now be tackled. Odier has been studying the problem for some time now, and his forthcoming book may give us a clearer idea of what he has been thinking.

One could go on discussing each paper, but that is not feasible in a short review. In concluding, we note a good bibliography of M. Bonaparte's work, and an author's index which is of very little practical value. The volume will provide much food for thought and some new insights which are more than enough to repay careful reading.

JOSEPH ZINKIN

Mackay, Roland P., M.D.; Lewis, Nolan D. C., M.D.; and Bailey, Percival, M.D., editors, THE 1952 YEARBOOK OF NEUROLOGY, PSYCHIATRY AND NEUROSURGERY. [Chicago: The Year Book Publishers, 1953. Pp. 603. $6.00.]

This standard annual survey keeps pace with previous volumes in presenting excellent epitomies of the newest in these three related fields.

The neurological section shows no spectacular new trends but rather points out that emphasis seems to have been placed on unusual cases and "remarkable cures" or, as the reviewer adequately puts it, "simply repeating what has often been said before." It is the elimination of this duplicate material that makes this book of real practical value to the busy practitioner.

The reviewer covers the fields of anatomy, and then puts considerable stress on the current advances in neurophysiology where some new work has been appearing. He stresses the study of encephalic localization and notes that attention is now more directly pointed towards studies of the operation of the brain as a whole. Here he emphasizes the work of Magoun, Jasper and others in defining the activator and depressor functions of the diencephalon and mesencephalon. The relationships of hormonal and chemical factors are also stressed. Pathology of infectious diseases, vascular disturbances and degenerative diseases are also adequately covered and then the epilepsies and cranial and spinal nerves are surveyed. In a chapter dealing with methods, a variety of therapeutic approaches are reported and the whole section is a compact approach to modern neurology.

The second part, Psychiatry, indicates that current trends are developing in the four major areas of psychosurgery, psychosomatic medicine, pharmocological investigations and psychodynamics. The reviewer rightly stresses that the increase of literature in these fields is progressing at such a pace that it is becoming nearly impossible to afford an over-all view of the mass of work accomplished. He suggests that the field of psychoanalysis is especially difficult for brief abstraction, and recommends accessory review summaries in this complicated field. This problem of literature increase beyond the capacities of even the most avid reader is a serious one since, in addition to frustration production, much of value is lost in the welter of mediocre verbalisms. The reviewer in this short section guides us through much of this material with a skilled hand, selecting only those articles of pertinent value and summarizing them in short but accurate style. Running through general topics dealing with suicide, sleep, sexual problems, etc., he then approaches the question of child psychiatry, emphasizing primarily problems of therapy and schizophrenia. A separate section of schizophrenia and affective disorders next follows, after which organic and toxic reactions are considered at some length. Psychoneuroses and psychosomatics are next considered, and then there is a long section on therapy, which is a most worthwhile evaluation of not only general approaches but technical methods of proven practical use.

The final part of the book deals with neurosurgery, a section which had been dropped but was reinstated as a result of reader demand. The editor foresees a widespread increase in interest in neurosurgery and discusses the current nationalism in claims for new developments. His reviews cover problems of tumors, hemorrhagic lesions, infections, intevertebral disks, malformations and general miscellaneous problems. Throughout these summaries the ability of the reviewer is in evidence in his skilled selection and summation methods.

The text, as always, has an excellent author index, a comprehensive regular index, carries many illustrations and is a most handy volume

for the expert or the beginner in these three fields.

DOUGLAS M. KELLEY

Moench, L. G., OFFICE PSYCHIATRY. [Chicago: Year Book Publishers, Inc., 1952. Pp. 310. $6.00.]

This text, written by the assistant clinical professor of medicine and of psychiatry at the University of Utah School of Medicine, is directed at making psychiatric knowledge available to the physician "clearly, simply, usefully, avoiding the special jargon and the obscure concepts which have alienated many medical students and physicians, depriving them and their patients of this valuable understanding." The author seems to have achieved his goal and, in addition to the simple linguistic presentation, has also added a large number of cartoons which, although at times spectacular, at least make the book more look-throughable.

Careful reading shows that the author begins, reasonably enough, at the beginning of personality formation with prenatal mental hygiene, passing rapidly to emotional health in childhood including discipline, and then moving on to adolescence. This first portion of the book demonstrates the general structure of the total book, which is quite well done, but necessarily superficial and hence containing many dogmatic statements. Problems of adolescence highlighted include emancipation, aggression, status, acceptance of one's own appearance, sex, anxiety and delinquency.

Having gotten through the developmental phase, the author next turns to psychosomatic medicine and discusses problems of hyperthyroidism, derminological lesions, respiratory and cardiovascular symptoms and gastrointestinal problems. He then moves into more specialized situations of obstetrics, gynecology and urology, and winds up with a short summary of headache.

Neuroses next come in for a brief chapter, followed by one on character neuroses, or psychopaths, and then the major psychoses are discussed. These three sections take up only 50 pages and obviously leave much to be desired from an expert view. Tabular techniques and the intriguing drawings, however, make the chapter good reading. Organic toxic psychoses are well discussed, including problems of alcoholism, drug addiction and the deteriorating patterns. Suicide rightly comes in for an entirely separate chapter, and the author moves to an intriguing discussion of a psychiatric examination with an excellent pictorial representation of poor interview techniques. These two chapters could be well recommended to all beginning psychiatrists as well as to general practitioners.

The rest of the book is devoted to types of treatment, beginning with psychotherapy in general practice, a short bit on psychoanalysis and a survey chapter on physiological therapy.

Considering the aims of the author and if one realizes this text is not for a psychiatric office, it must be conceded the author has made his point and presented concisely in a somewhat whimsical fashion much of the meat of psychiatric thinking which should be ingested by any physician if he is to function in a reasonably successful fashion. The light touch of the author in his writing, the many outstanding graphical cartoons (there are some that are not so good too) and his general attitude in the approach to the subject should make it have wider reader appeal for the general practitioner and the beginning student.

DOUGLAS M. KELLEY

Polatin, P and Philtine, E. C. THE WELL-ADJUSTED PERSONALITY. [Phila.: J. B. Lippincott Co., 1953. $3.95.]

It is refreshing to find a book that is both inspiring and realistic, both sound and readable, and both comprehensive and clear. This volume certainly justifies the application of these adjectives. The authors are a psychiatrist and his wife who have woven together a beautiful discussion of the problems of life adjustment. This is directed toward an audience of lay people who may have little or no psychiatric vocabulary, but who have some capacity to think about themselves and other people. It is on this capacity that the authors build their thesis that most people have problems and that many people do not know what to do about them. They suggest that sometimes these problems require professional aid and intensive care up to the point of psychoanalytic treatment. In other cases, probably most, there are simpler avenues of adjustment.

The authors quite realistically point out dif-

fe ences of temperament and adjustment capacity and suggest frankly that persons learn th limitations within which they may live and bc happy, discouraging frantic strivings toward u attainable goals or eternal shopping for th rapeutic saviors who will completely alter th ir lives. All this helps to balance the popul r overestimation of the services psychiatry ca now render. For every one person it will se d to a psychiatrist, it will help nine others to arrive at a satisfactory adjustment without professional treatment. Particularly valuable to anxious people who feel a tremendous need to conform to their notion of the "normal" and "mentally healthy" pattern for life is the handling of a chapter entitled "Not Everybody Should Marry." Here, as in the discussion about having children, the authors emphasize the danger of trying to force many different kinds of persons into artificial patterns of conformity.

The handling of religion is unusually thoughtful, the authors recognizing its importance in marriage and child rearing. Chapter headings are good. There is an excellent index.

All in all, the net effect is optimistic and comforting to the layman. I do believe the book can be trusted to his tender hands. It might also be helpful to psychiatrists who are called upon to speak publicly or write for laymen. It is a model in restraint and common sense.

EARL A. LOOMIS, JR.

Riese, Walther. PRINCIPLES OF NEUROLOGY IN THE LIGHT OF HISTORY AND THEIR PRESENT USE. [New York: Nervous and Mental Disease Monographs, 1950. Pp. 177. $6.00.]

The Greeks were aware that movement, sensation and intelligence are related to cerebral function, but for centuries afterward all progress was halted by the search for the seat of the soul in the brain. It was not until the 19th century that the doctrine of cerebral localization of function took concrete shape, with efforts directed toward the mapping of cerebral centers of movement and sensation. Even the traditional soul was subdivided into its presumed elements (i.e., into different psychic functions) which were related to well-defined areas of the brain.

It is in this vein that Dr. Riese has laid the background for his analysis of the ideas on which our present concepts of cerebral function and dysfunction rest. Much of the monograph pivots on the thought of three men—Hughlings Jackson, whose theories Riese has often expounded, Constantin von Monakow, Riese's teacher, and Kurt Goldstein, his close associate.

Not only does Riese analyze past and prevalent concepts, and give them substance, but in his syntheses he breaks new ground by interjecting his own ideas. He shows himself a master in expostulating on threadbare generalizations. The steps through which Hughlings Jackson, Sherrington and Head effectively repudiated the concept of the existence of fixed and isolated functional units in the brain are traced. The principle of *resistance* enunciated by Hughlings Jackson through his conclusion that the phenomenon of spread of an epileptic discharge means an overcoming of the resistance of spatially related structures, was broadened by Riese by his inclusion of pain and hallucination in the same orbit. In analyzing the basis for the appearance of signs and symptoms (for instance loss of speech) following the destruction of a part of the brain, Riese elaborates the concept of differing vulnerability of types of behavior to regional lesions. As to *substitutional activities* of the brain, he says that one must conclude that no structure can ever take over activities to which it made no previous contribution. No structure, he points out, is ever in possession of an irrevocable chief position, but is part and parcel of a *mobile hierarchy*. Similarly, it is less the local lesion in itself than the changing interrelation of the parts which is responsible for the appearance of symptoms. The relevance of the time factor is shown in the revitalized doctrine of the "momentum" of brain lesions, suddenly developing lesions inducing symptoms, slowly developing ones, though identical in site, leading to little or no functional deficiencies. And thus Riese moves from aspect to aspect of his almost overwhelming subject in a manner which will surely stimulate the reader to thought.

In this monograph we find superb expositions of von Monakow's diaschisis and the distinction von Monakow made between transient and residual symptoms; the Vogts' pathoclisis; Sherrington' spinal shock; Munk's *Seele;* Goldstein's elimination of inhibition; Head's re-

flexes as coherent reactions and von Economo's progressive cerebration. Each of these, and many more, take on richer meaning as they pass under Riese's scrutiny.

Every page possesses nuggets in store for the reader. Dr. Riese has accomplished a task which few are qualified to handle. This monograph is a fitting companion piece to his *L'Idée de l'Homme dans la Neurologie Contemporaine* (Alcan, 1938) and *La Pensée Causale en Médicine* (Presses Univ. de France, 1950). It is unique in the field of neurology in that it carries an exposition of ideas, not their mere compiling and cataloging. Neurologists are assuredly in Dr. Riese's debt.

WEBB HAYMAKER

Schilder, Paul. MEDICAL PSYCHOLOGY. Translator and editor, David Rapaport. [New York: International Universities Press, Inc., 1953. Pp. 428. $7.50.]

This work is presented to us in its first English translation (in fact it has never appeared in any other language but German before this). It was originally published in 1923 when the late Paul Schilder was a privat dozent at the University of Vienna. It was intended as an introduction to psychology for physiciarts and advanced students of medicine. It is presented here not as a historical document, but because of its inherent value which time has not only not dissipated, but has not quite caught up. One can only agree with Rapaport that "it represents the sweep of the most catholic thinker in the history of psychiatry." The translator justifiably feels that the work can give a broader frame of reference than any other available volume to psychologists, psychiatrists and analysts.

Schilder gives us a broad selection of both clinical and experimental data and concepts. Many of them new then and still new and interesting today. Schilder was one of the first to try and utilize Freud's views. It was Schilder's contribution to relate observation and theory in neurology and psychology. His was the first and still remains one of the outstanding contributions to a dynamic, inclusive welding of organic neurology and psychological data into a more unified, workable whole.

The work is not easy reading, it remains (like all of Schilder's writings) loose, at times incomplete and haphazard in thinking out certain lines of concepts. He had to rush on to the next. This in a field which is notoriously indefinite and subtle, doesn't make for popularity or pleasurable reading. Nonetheless, Schilder's near genius was fertile, powerful and suggestive and there is much gold left to be mined that he merely indicated.

This volume does not contain the last of its seven sections (that on Affect and Experience which it contained in the original). In view of that section's diversity of topics in thirty pages—it is just as well left out. To compensate us, the translator has also acted as editor and added extremely valuable footnotes bringing Schilder's pages up to date as to concepts, bibliography and evidence. His introduction is very valuable and useful as a guiding star. Rapaport has also added his own paper on "Paul Schilder's Contribution to the Theory of Thought Processes"—which is a good summary and review of Schilder's work in this area. The bibliography has been expanded and brought up to date.

No short review could hope to begin to do justice to a work covering this large area. A mere indication of the chapter headings will give the reader a taste of what it contains: the theory of perception; action and language; memory; drives, will, and action; ego and personality. To the admirers of Schilder, this book will be a truly happy addition to his works available in English. To those who approach him for the first time, one can only envy the surprise in store for them who meet this mind for the first time. We are most grateful to translator and publishers.

JOSEPH ZINKIN

Slavson, S. R., CHILD PSYCHOTHERAPY. [New York: Columbia University Press, 1952. Pp. xiii + 332. $4.50.]

Slavson is quite well known to most of our readers as an authority on group psychotherapy with children. Director of the group therapy program at the Jewish Board of Guardians, he has been a pioneer in this field. In the present volume he has undertaken a more complete and systematic picture of the socially maladjusted and emotionally disturbed child under the age of twelve. It is basically a clinical study with the main stress on the treatment process.

Slavson views the child in the total setting in which he must necessarily grow. Social and cultural factors weigh heavily in the balance and are more clearly operative than in the adult. The positive and negative forces of the total environment shape and condition the child as much as do his inner bio-psychological drives. Thus the book is divided into three parts: development, psychopathology, and the longest and most valuable part, that on psychotherapy. The first two parts are acceptable presentations of the essential facts and formulations as we know them. There is more than adequate evaluation of the familial tensions under which any child operates.

After some four decades of work, and twenty years of clinical experience, it is obvious that what the author has to say about therapy of children (using basic Freudian tools, and modifying the techniques as needed to children) is eminently deserving of careful study.

The underlying feeling of the author, who speaks of the "psychotherapist" is that social workers, psychologists, and others, as well as psychiatrists should and can be trained to work with children. Much of what he says is directed to non-medical people in training or practice. There is an example of the treatment of a neurotic boy with organic defects which illustrates the author's techniques and approach. Such a case would be appropriate for a non-medical therapist. The book is certainly a solid, reliable, and very adequate introduction to the problem of treating children regardless of what particular theoretical bias the reader may have. There is an excellent index for this well printed and carefully edited publication.

JOSEPH ZINKIN

Steinfeld, Julius I. THERAPEUTIC STUDIES ON PSYCHOTICS. [Des Plaines: Forest Press, 1951. Pp. viii + 262.]

The author presents in this text two papers rewritten from presentations to the Psychoanalytic Society of Chicago and the Illinois Psychiatric Society, together with two shorter discussions apparently from research work. In his Preface Steinfeld meets an obvious criticism when he states that the topics seem to be without connection. He feels the fact that they developed from his therapeutic enthusiasm and that they illustrate his conviction that if one method fails, another must be tried ties them together. A nutshell summary of the book is that it sums up the author's personal methods of treating psychotics.

The first paper deals with the theory that an abolition of conventional methods in a therapeutic situation will better establish true interpersonal relationships, the elements of which are transference and countertransference. The approach is dogmatic in that the author, to a large degree, states precisely what he does, but he recognizes this situation and stresses his realization that his theories are hypothetical. Mostly the chapter is a series of cases, fourteen in all, and he details his method of handling them. This section is concluded with an epilogue on the Pygmalion concept, in which he traces his techniques back to his early training and evaluates his methodology.

The second section shifts into modified methods of electroshock therapy, and begins with the therapeutic import of shock treatment. The author employs pentothal as a preventative to the developing fear of treatment occurring in some cases, and stresses the economic gain to the patient of ambulatory, week-end shock. He also emphasizes the need for proper psychotherapy, and illustrates his approach with more cases. The second part of this discussion is primarily statistical and he gives his results in 500 cases. Individual psychoses are discussed, and short case examples presented. The author rightly emphasizes the need for variation in treatment, stressing that the method or combination of methods to be used should be unique in each case.

The third chapter is an intriguing one, dealing with the restricted use of male sex hormone for chronic female psychotics, the author in this instance using varying doses of testosterone propionate. He presents the cases of female psychotics and states a number of patients have benefitted. He stresses that symptoms are alleviated only and does not claim cures, but feels difficulties of adjustment in some chronic female patients are overcome.

The last chapter deals with the therapeutic value of acidosis in the treatment of psychotics, and presents a series of studies based on blood pH findings in cases receiving a variety of electroshock therapies. He reports 56 cases, giving a few in detail.

Steinfeld's final hope is that "'Therapeutic Studies'—incomplete and speculative as they are at times—will aid in the improvement of our present-day methods, and that other workers in this field may find these contributions valuable and helpful." This reviewer would agree with the hope, but throughout the volume the question of Why is this a book? keeps recurring. The last two papers certainly should be published in the journal literature and the first two alone hardly merit being bound as a volume. With the tremendous number of books appearing in the field, one wishes that material such as is included here could be pared to the bare bones for rapid assimiliation and the data presented in synopsized form in a current journal. The working formulations of the author are sound, but aside from a few experimental observations, no really new therapeutic material actually is evolved.

DOUGLAS M. KELLEY

Strecker, Edward A., M. D. FUNDAMENTALS OF PSYCHIATRY, 5th Ed. [Philadelphia: Lippincott, 1952. Pp. xiii + 250. $4.50.]

This fifth edition has been widely re-edited and many sections rewritten in an attempt to appeal directly to general practitioners and workers in every area of medicine and surgery. The author feels that these physicians should and must treat great numbers of patients suffering from psychoneurotic and psychosomatic disabilities. He stresses the fact that 60% of the everyday practice deals with the clinical expressions of unconscious and unsolved emotional conflicts, and has therefore rewritten the chapter "Psychosomatic Medicine and Psychiatry", and added a chapter on psychotherapy. The text follows the structure laid out in the earlier editions, beginning with a good chapter on the history of psychiatry, and moving then into general etiology, classification and methods of examination. These sections are simply written with sufficient material to make them worthwhile to the beginning student. The section on history taking is of particular value.

The author next takes up the basic psychoses and then the psychoneuroses. He includes the psychoneuroses in a chapter with functional psychoses in an attempt to emphasize the nonstructural bases of both. This may prove confusing, although he later attempts to differentiate the psychoneuroses from the psychoses. He then takes up psychosomatic medicine and defective reaction types, and then introduces the new chapter on psychotherapy, which is primarily a summary of available methods without specific emphasis on any basic technique. He defines psychotherapy as

> "Psychotherapy is any honest treatment measure emerging from the relationship between patient and doctor, which improves the understanding and the attitude of the patient toward self, toward his illness and toward his environment."

This chapter is a well rounded discussion and should solidly introduce the beginner to the field.

The section on Psychiatry and War and on reconstruction is taken from the author's vast experience in this field, and he concludes with a discussion on the Nurse and the Psychiatric Patient, which is short but of value to a beginner. A Glossary and Index make the book more workable, and for the general practitioner or the student, this text presents a concise summary of the useful knowledge in the field to date.

DOUGLAS M. KELLEY

Sullivan, Harry Stack, M. D. THE INTERPERSONAL THEORY OF PSYCHIATRY. [New York: W. W. Norton & Co., Inc., 1952. Pp. Xviii + 393. $5.00.]

Sullivan's was a keen (often accusing) and pregnant mind. In his later years, he impressed one as being more of a sociologist than a psychiatrist. Nothing he wrote and none of his lectures were ever without considerable value once one had gotten by his personal terminology, his atrociously complex style of writing (less marked in his lectures) which make it often a chore to read him. His ardent friends and disciples have given us in the present volume the first book from his unpublished lectures. The book has been limited mainly to a series of lectures which he gave in the Washington School in the winter of 1946-47 and represents the last complete statement which he made of his concepts of psychiatry. These lectures were recorded. Footnotes incorporate most of the new material which appeared in the unfinished lectures which he began in 1948. His notebooks have been called upon. The parts of his lecture series devoted to the work

of the psychiatrist have been omitted and will be published in a separate volume.

The present volume is divided into four major parts. First, in the introductory concepts, we are given Sullivan's meaning of the developmental approach, his definitions (extremely important in understanding him), and his postulates. The second part on developmental epochs, he traces the development of the psyche from infancy through late adolescence. This part consisting of 250 pages is more than half the book. Part three, discussing patterns of inadequate or inappropriate interpersonal relations, represents Sullivan at his best and most distinctive. It is in this area that he had perhaps been most fertile and impressive. Here he is truly most original. A short final part on "Towards a Psychiatry of Peoples" gives a Sullivan who is more prophet than psychiatrist. Here he is least helpful, the sociologist outweighing the medical man. It would be superfluous at this late date to review Sullivan's theories—only too well known. This much can be said for this work. It gives us the author's views in their last (not final, since he was never final, always revising) formulation. No better way of learning what he had to offer exists than a careful, patient, and sympathetic reading of this book. It is a fair systematization of his latest thinking.

JOSEPH ZINKIN

Tinbergen, N. THE STUDY OF INSTINCT. [London: Oxford Press, 1951. Pp. 228. $7.00.]

As an indirect contribution to psychiatric theory by an outstanding authority on animal behavior this book is in a class by itself. The author, who is originally from Holland, is now lecturer at Oxford University. One of his aims, as explained in the preface, is to call the attention of Anglo-American workers to research done on the European continent, most of it published in German, and largely unknown to English and American science. Another aim is to link ethology, defined as the objective study of behavior, with neurophysiology.

Drawing freely on the work of others as complementing and corroborating his own, Dr. Tinbergen has presented a mechanism of instinct in which the successive activity of different levels of nervous integration is stressed as of paramount importance. He posits two components of instinctive behavior—the one *appetitive,* which is variable, adaptive and purposive; the other *consummatory,* which is stereotyped and represents a lower level of nervous organization. The transition from higher to lower centers is brought about by special sign-stimuli which are necessary first to release the various steps in the appetitive or striving phase, these becoming more stereotyped as they proceed; and finally to release the consummatory act itself and bring the impulse to an end.

This concept of a hierarchical organization of instinctive activity involving a "stepwise descent" from variable to rigid behavior patterns is illustrated by examples chiefly from the nesting, sexual and fighting habits of birds and fishes. But the principle is offered as applying wherever innate instinctive patterns are activated. Even sleep is considered as coming under the heading of instinct, having a hypothalamic origin and a special kind of appetitive phase of its own, directed toward attaining an appropriate situation.

Instinctive patterns are considered as continuously primed, that is to say, prepared to come into action, and an Innate Releasing Mechanism (IRM) is postulated. This means that each pattern is strictly dependent on a certain set of sign stimuli, and implies a special neuro-sensory mechanism that releases the reaction.

When the sign stimuli required for the consummatory act of any instinct are not forthcoming it may happen that the only open path is to the continuance of appetitive behavior (such as swimming around, waiting for another male to be fought or a female to be courted or nest material to be used in building). On the other hand, such lack of stimulation leads under some conditions to *displacement activity* which is always an innate pattern (usually incomplete) belonging to another instinct. This is particularly the case where there is strong motivation of a drive (most commonly the sex drive) brought to a halt because the external stimuli requisite for the final stages fail to appear.

Another situation which leads to displacement activity is conflict between two strongly motivated drives. Thus the curious threat posture of the male stickleback, which is actually

a modified digging movement and part of the nesting pattern, is resorted to, as the author has shown experimentally, when the incompatible impulses of attack and escape are in exact equilibrium.

The subject of displacement is effectively illustrated by a page of drawings representing 16 different varieties of this reaction.

A few displacement activities of man are mentioned at the very end of the book, leaving the subject thrown wide open for further investigation. .

Among the many other concepts that have a direct application to human behavior, the following two, both of them only briefly touched on, seem to this reviewer of special significance. (1) *Supernormal sign stimuli:* Under this heading some experiments are recorded which show the remarkable fact that certain birds, when given a choice between their own eggs and others that are larger, or more highly colored, or more numerous, show a decided preference for the latter. In other words, it is sometimes possible to offer stimulus situations that are more effective than the natural situation. Whether the reaction of these birds to supernormal sign stimuli has ever been observed in their natural environment the author does not say. (2) *The Inserted Link:* This concept is introduced as an essential part of social cooperation under the heading "Activities of Advantage to the Group." The term is used to signify the factor of communication which is inserted between the perception (of food, danger, mate, etc.) and the ultimate adaptive response. The extra link is a kind of signal system, and serves to release a response in one or more other individuals. It can instigate escape behavior through cries of warning to the group, etc.; it is present in all sexual behavior, as coloration, display, posturing, etc.; and it is obvious in the begging movements and calls of young birds.

In a certain sense, as the author claims, the "inserted link" is a new feature, and deserves special attention. In line with this idea a study of human language as an inserted link might well be undertaken.

There is a chapter in the book on the internal factors responsible for the spontaneity of behavior (as hormones, internal stimuli, intrinsic impulses, etc.) and two chapters on behavior as a reaction to external stimuli. The influence of the external factors is explained as superimposed on that of the internal factors. Usually the latter do not by themselves evoke the overt response, but merely determine the threshold of the response to the external stimuli. Exceptions to this occur, however, as shown by "vacuum activities" where the internal drive is powerful enough to break through as motor response without the presence of releasing stimuli.

This study of instinct is an extension of a series of lectures delivered in New York in 1947 under the auspices of the American Museum of Natural History and Columbia University, and is presented as a programme for further investigation rather than an exhaustive treatise of results. Considering this and the variety of angles from which the subject is discussed, the author has developed a remarkably coherent and extremely interesting picture of innate behavior. Particularly noteworthy is the fact that this is the first time an organization of the problems that relate to instinct has ever been attempted.

NINA BULL

Tredgold, A. F. MENTAL DEFICIENCY. 8th ed. [Baltimore: Williams & Wilkins, 1952. Pp. 545. $7.50.]

This is an up-to-date, revised edition of a reliable text book upon the subject of mental deficiency by a man long recognized as an authority in the field. The first edition of this work appeared in 1908 and the fact that it has run through the eighth edition is testimony to its usefulness and appeal. The present volume has been revised rather fully and the chapter on etiology has been largely redrafted.

Beginning with a chapter on the nature of mental deficiency, the author proceeds through a discussion of etiology, psychology and pathology and the physical characteristics of amentia in subsequent chapters. Feeble-minded children and adults are discussed adequately and with the understanding of a physician thoroughly familiar with his specialty.

The chapters upon the clinical varieties of primary amentia and secondary amentia will repay the reader interested in the subject and the chapter dealing with "idiots savants" is of general interest.

When the author gets into the field of

moral deficiency and the psychological basis of misconduct, some readers will part company with his philosophic orientation but his ideas deserve a hearing. In a discussion of the number of criminal aments, a subject which occupies the courts and the public press at regular intervals, the author makes the statement (page 374) that he is of the opinion "that the proportion of criminals who are mentally defective is probably not much less than 10%".

In regard to the treatment of aments (chapter XX), the author finds little help from the use of glutamic acid or thiamine and, while in no way a therapeutic nihilist, he states categorically that there is no drug or medical treatment that will cure primary mental defect and he believes this fact should be emphasized. His emphasis is upon training of these patients and general experience has borne out his beliefs.

The book in all is well worth reading and parenthetically it is good to know that a younger Tredgold is following the path and interest of his well known father.

FRANCIS J. BRACELAND

Vanderveldt, James H., Ph.D., O. F. M., and Robert P. Odenwald, M. D. PHYSHIATRY AND CATHOLOCISM. [New York: McGraw-Hill, 1952. Pp. 433. $6.00.]

This is an important book, written by a Franciscan Priest and a psychiatrist, and it marks an attempt to find the points of agreement between Catholic philosophy and modern psychiatry. It treats of subject matter of great interest to the theologian as well as the psychiatrist.

There are chapters entitled Person and Personality, The Moral Law, Conscience and Responsibility, The Psychological Method, Scrupulosity, in addition to the various chapters on psychiatric entities. Difficult subjects, such as homosexuality, impotence, frigidity, etc., are treated from a scholastic standpoint and in general one concludes that there are few points of difference between scholastic concepts and modern psychiatry. The differences, when they do occur, are apparently in the philosophy which accompanies some of the present-day concepts.

Much of the material is well done. In the treatment of the psychoses the authors are a little out of date, which is understandable. Aside from that, however, there is a broad, middle-of-the-road approach to psychiatric problems, apparently with a full knowledge of the beliefs of various schools. The chapter on scrupulosity is noteworthy, as, in fact, are most of those which are of philosophic nature. One would not necessarily agree with some of the notes on treatment, but there is nothing which can be objected to from a scientific standpoint.

There is an interesting chapter entitled Psychiatry and Religion which sets forth the Catholic objections to some psychoanalytic concepts. The tone is moderate and the treatment is fair and it is obvious that there is a desire for rapprochement between the various ideas which are abroad in modern clinical psychiatry. The book fills a need and can be recommended to anyone who is interested. It will make good reading for any educated person.

FRANCIS J. BRACELAND

Walshe, F. M. R. DISEASES OF THE NERVOUS SYSTEM, 7th Edition. [Baltimore: Williams & Wilkins Co., 1952. Pp. 365. $5.50.]

The author of this work, in addition to being one of the world's leading neurologists, is a scholar and a philosopher whose medical writings and lectures are in demand. The fact that this text book has already gone through six editions since 1940 is insurance that this, the seventh edition, will be most welcome.

There is a lack of pretentiousness about the book. It is what it sets out to be—a simple text book written for practitioner and student. It leaves out nothing which is basic in its subject matter and the author has the courage not to overburden it with accessory information simply to achieve the illusion of completeness.

Noteworthy in its simplicity, the material is set forth clearly in good English with a minimum of jargon and a dearth of "eponymous signs and syndromes by means of which enterprising clinicians stake out their claim, as it were, upon the human body". There is new material in this edition, upon disseminated scleroses, poliomyelitis, and the various aspects of treatment which have come to the fore in recent years.

This reviewer does not agree with Doctor Walshe in his considerations of the psycho-

neuroses and almost wishes he had not included that chapter in this excellent work. Agree or not with it, as we choose, the author's treatment of the subject is good as he sees it. Were we to admit his initial premises on the subject, we could naturally follow him even in this chapter.

The book is a fine exposition of the subject and will be found quite useful for the practitioner who needs to learn the elements of clinical neurology without poring through a tome to accomplish this need.

FRANCIS J. BRACELAND

Walter, W. Grey. THE LIVING BRAIN. [New York: W. W. Norton & Co., 1953. Pp. 311. $3.95.]

Dr. Grey Walter, a Cambridge physiologist, has pioneered some important developments in the field of electroencephalography in England. His name is very well known to people working in this area. It is from him that we have here in this book the first effort of "popularization" (uses in the best sense, à la Eddington) of the tremendous advances of the last twenty years in our knowledge of the mechanics of the brain. Professional workers in medicine, as well as everyone interested in the mysteries of the "master of destiny" will find this work not only illuminating, but what is even more rare, accurately scientific. At the same time, it is as fascinating as a novel. The author has a very real facility for and an unusual gift of exposition. With a minimum of speculation, he has written an exciting book in a field where such writing tends to be rather dull and pedestrian.

The author begins with a history of the evolution of the brain. He goes on to tell the story of Berger's invention and the eventual perfection of the E. E. G. machine. He discusses, analyzes, and vivifies the results of this work—on memory, vision, fatigue, sleep, hypnotism, disease, and diagnosis. There is a rather difficult chapter on electrical brains and the "toys" containing them which he has invented to demonstrate his theories of brain mechanisms and learning. Whether this chapter would be comprehensible to the general reader is very doubtful, but it is certainly most intriguing to the psychiatrist, neurologist, and psychologist. There is included the best discussion of the "flicker phenomenon" on brain waves that this reviewer has read. He links this with a specific variation in the mechanisms of learning.

There is an exposition of the mental experiences of the subjects under this phenomenon which is of great interest to the psychiatrist. The author notes organized hallucinations, feelings such as fatigue, confusion, fear, disgust, anger, and pleasure are elicited by this experience. Walter makes an important point in stating that the "alpha rhythm is a process of scanning—searching for a pattern—which relaxes when a pattern is found." This is analogous to some devices used by electronics engineers. He is even tempted to develop a theory of scanning as the final stage of all sensory processes.

The author's attempts to extend E. E. G. findings into the field of personality types strike this reader as the weakest and least valuable aspect of a volume that carefully resists going too far beyond the experimental evidence. All in all, this is an extraordinarily fine piece of work in a difficult field which one would never suspect could be made as interesting as it has been made by Dr. Walter. It is a rare gift, indeed, that can produce such a fine piece of scientific exposition. It recalls the excitement of H. S. Jennings' work for the general reader in the field of genetics.

JOSEPH ZINKIN

Wepman, Joseph M. RECOVERY FROM APHASIA. [New York: The Ronald Press Co., 1951. Pp. xii + 276. $4.50.]

This text, as Wendell Johnson points out in his Foreword, is a long awaited book, since it represents a coordinated team attack on the problem of treatment of aphasia. The author defines the aphasia therapist: "In certain frames of reference it may be the speech pathologist, who sees his task as a re-education of the patient's speech abilities. Or it may be the clinical psychologist, whose orientation is largely psychotherapeutic and who visualizes re-establishment of the patient's personality as the greatest need. It may be the special educator, whose techniques in developing new learning are called upon to guide the recovery process. So, too, the physiotherapist, the occupational therapist, the neurologist or psychiatrist or family doctor or nurse of the over-all team of re-

habilitation may each in the exercise of his or her specialty be considered an aphasia therapist." This broad spread emphasizes the approach of the book, which utilizes all methods and techniques in a frontal assault on this extensive problem.

The book is divided into three sections, the first dealing with the nature of aphasia. Here only enough information is given for the beginner to understand the simplest neurological facts of the problem, and the section is a survey of the work of the early investigators and the further work of Jackson, Goldstein, Head, Halstead and many modern investigators. A chapter on the nonlanguage characteristics of aphasias covers some of the work of Halstead, Rorschach evaluations and Army findings. Personality characteristics are discussed. Finally, there is a chapter on nomenclature, which is exceedingly handy in that a table of comparative terms introduced by varying students in presented with good clarity.

The second edition of the book deals with the developments during World War II, stressing the work at De Witt General Hospital, and the Aphasia Center there. Effects of training on aphasics and other areas of research, such as IQ and aphasia, use of school teachers as instructors, methods of re-training and other results, are presented.

The last part of the book deals with aphasia therapy and therapists, and begins with a discussion of the author's working theory. He looks at the aphasic as a total individual and discusses re-education of the whole person. This concept controls the working principles of therapy, since it requires planned psychotherapy throughout the entire program. Goals of therapy are conceived as dual achievements—a long-term eventual goal and immediate, short-term, day-by-day goals. This approach is singularly effective, since it helps prevent the depression frequently occurring when a patient is unable to achieve the long range goal in a brief period.

The atmosphere of the treatment center, self-concepts of aphasic adults and early training method are also considered. A chapter on the professional aphasia therapist stresses the need for neurological training and psychological grounding. The role of a speech pathologist is delineated and it is stressed that a professional therapist should be a combination of these experts and an educator as well. The author feels that individuals working as a team can contribute these specialties, and emphasizes the tremendous need for centers where such experts are available. Practically, however, he faces the problem that a single therapist frequently must carry the load, and suggests training approaches which will tend to accomplish this result.

There is a chapter on the preparation for professional therapy, including history technique, interviews and examinations. This chapter presupposes considerable knowledge of clinical psychology, and is probably too complex for anyone not familiar with this field. The author then discusses stages of recovery, beginning with what he calls the primary stage—the phase from brain injury to beginning therapy, recognizing that the burden here falls usually on the hospital staff, nurses, etc. The second stage of recovery deals with problems of actual patient handling, and here all sorts of practical information is packed into a short space. Direct therapy, that is, how to actually go about it, comes in for several chapters and this section of the book is certainly practical and will be directly useful to the student.

The last chapter has some case material and, in addition, there is a bibliography and an index of names and an index of subjects. The book will be used by workers in this field and an attempt has been made to write it in such a fashion that it could be of value to relatives of aphasic convalescents. As such a volume it is probably a little more complex than the average relative can assimilate and in making the attempt, some technical material has obviously been eliminated. A second edition directed more at the actual therapist with an increase in technical information would improve this text and the author could then well bring out a simplified version as a handbook for lay persons.

DOUGLAS M. KELLEY

Winter, J. A. ARE YOUR TROUBLES PSYCHOSOMATIC? [New York: Julian Messner, Inc. Pp. 218. $3.50.]

This volume, written in popular vein, proposes to "explain fully the seemingly mysteri-

ous workings of psychosomatic medicine". The dust jacket of the book identifies the author as "an enlightened and completely scientific practicing physician" but on several occasions in the body of the work he designates himself as a psychosomaticist.

When a reviewer disagrees with as much of the contents of a book as this one does at present, it is perhaps better to quote a few paragraphs and then let the reader decide for himself what he thinks about it. I personally also disagree with the author's ideas of what religion, soul, popular illness, homosexuality, and anxiety mean and I fear anxiety gets mixed up with fear regularly in this opus.

Here are a few samples of the contents:

"Is the anxious person trying to die? No, we reject that theory; he is trying to live but somehow has confused continued living with the avoidance of activity. When he can understand how such a confusion developed, he can *snap out of it* since he doesn't really want to die." (page 49)

"The evidence available in terms of what we know of human behavior leads us to the belief that in the human being anxiety is a function that is totally destructive." (page 52)

Just two more quotations will suffice, I believe:

"In order for a child to grow to be an adult capable of love, the inspiration which comes from the warmth and vitality of the sex quality in the parents' must be known. Parents need not worry that this might lead to incest—it cannot." (page 109)

Finally, anent the bickering of man and wife, the author tells us:

"One way to minimize the ill feelings and clear the atmosphere is for them to have a little quarrel for a few minutes or so; then by mutual agreement they repeat the quarrel but this time with the man saying all the things the wife said and the wife making the remarks her husband made. In most cases a few minutes of this reversal of role leads to a recognition of the ridiculousness of it all and the tension of the scene dissolves in laughter." (page 215)

This gives one a general idea of the contents of the volume.

FRANCIS J. BRACELAND

Wisdom, John Oulton, THE UNCONSCIOUS ORIGIN OF BERKELEY'S PHILOSOPHY. The International Psycho-Analytic Library, No. 47. [London: The Hogarth Press, 1953. Pp. XII + 244, 25 shillings.]

Mr. Wisdom is a philosopher and teacher of philosophy who has been working in his own field but applying psycho-analytic theory and techniques to the problems of philosophy and philosophers. Many of his papers have appeared in the International Journal of Psycho-analysis. It is his avowed purpose "to interest analysts in philosophy which is perhaps the strangest of all creations of the human mind, and to interest philosophers in psychoanalysis." This particular volume also aims to give a full exposition of Berkeley's metaphysics utilizing recent scholarship.

The book is divided into three parts: the first, an exposition of Berkeley's philosophy; the second, a short life of the English philosopher; and the third, an interpretation of the origin of the philosophy from the point of view of the unconscious and psycho-analysis. It is the third part which is of prime interest to psychiatrists. The notes that philosophy is the last refuge open to myth (though not necessarily every kind of philosophy is impregnated with it). Nonetheless, "the analysis of a philosopher does not in itself refute the philosophy." This can be equally said of art and the artist. Berkeley's philosophy might be summed up as "theocentric phenomeralism and denial of matter: and from this he never swerved."

In interpreting the unconscious elements in the origin of Berkeley's philosophy, Professor Wisdom notes that the philosopher did not get married till he was 43 years of age, and then at the same time he developed a belief in the magical and curative powers of tar-water. The unconscious elements of this state of affairs and Berkeley's philosophy goes something like this:

The philosopher felt that he had a poison inside himself, clogging and destroying him. Matter symbolized poison in the external world. Tar-water cleansed internal poisons as his principle of Esse percipi cleansed matter from the external world. Thus there was a shift from the poisonous (matter) elements of

the external world to a fear of internal poison (hypochondraisis)—which occurred in middle life. To eliminate matter from the external world meant to preserve God. (Berkeley's unconscious fear of turning God into matter or poison). Berkeley did not realize that he wanted to turn God into a poison. There was deep, unconscious guilt against which he fought by a denial of matter. Later in adult life Berkely felt faices were poison. There was obviously an identification of Berkeley with God. The author discusses many other points of Berkeley's life history which would be too involved to attempt to summarize. The speculations are no more unreasonable than Berkeley's attempt to deny matter. It is certainly not possible to explain the metaphysics of the philosopher on any but such unconscious grounds. The motivation to deny the obvious (even philosphically) are due to deeply grounded emotional factors. Wisdom writes extremely well, and handles a difficult problem with a sense of proportion. Whether it is well grounded analytic interpretation can be left to the reader's determination. The whole volume is fascinating as a rather unique attempt to analyse a rather unique philospher.

JOSEPH ZINKIN.

Wolff, Werner, THE DREAM—MIRROR OF CONSCIENCE. [New York: Grune & Stratton, 1952. Pp. vi + 348. $8.50.]

The author launches his discussion of dreams on the hypothesis that "dreaming and thinking are not completely different in structure but are different only in degree, form of communication, and emphasis of the same thought contents in the waking state." He feels "that the dream is not a divider but a synthesizer of thoughts," and the "dream becomes the expression of the unity of personality." He further believes that "the dream mirrors not only that which life denies to us but also that which we deny to life."

He begins his formal discussion along these lines with a study of the dream and history, beginning with the work of Malinowski and Lincoln with primitive dreams and quoting freely from the anthropological literature for his examples. He takes up next dreams in the ancient Orient and in the Bible, Roman, Greek and Medieval concepts, and the theories current in the 19th and 20th Centuries. He concludes with a discussion of post-Freudian interpretations, including summaries of the approach of Alder, Jung, Stekel and Rank. This section is obviously too short for comprehensive coverage, but will present to the beginner a really good, quick survey of the historical part of this problem. The author concludes his section with some of the better known psychological experiments, and a brief discussion on objections to dream interpretations.

Part II deals with the dream and motive, taking up the relationship of thinking, day dreams and reality to dreams, and then entering a discussion of dream types. Here the author presents some comparisons on dream characteristics which yields some interesting data concerning dream situations, positive and negative attitudes, etc.

Recurrent dreams are next discussed, with childish dreams highlighted, and then the oldest known dream series written in cuneiform characters and dealing with the dreams dreamt by Gilgamesh in the Babylonian epic are summarized. Interpretations according to Freud's, Adler's, Jung's and Steckel's views are made, and then the dream series is analyzed in detail according to the author's own technique. This use of the dream series during psychotherapy now comes in for discussion, and then a series of dream patterns, extending over many years, taken from diaries or other literary sources are considered. The dreams of Friedrich Hebbel, Descartes, Freud and Turgenev are considered in detail and give a fairly good portrayal of the author's approach to the interpretive problem.

In Part III, Dream and Decision, the author begins by considering the problem of values in relation to man's behavior and suggests that, "In his sleep when man cannot escape from the questioning of the meaning and the value of his life, his mind will struggle to find an answer." The author feels that in his dreams man is able to use a language of symbols, lost in the waking state and that he uses these symbols to recapture the real notions of value of his existence. He believes the fantasy of birth and the fantasy of death leading to the questions of Where did I come from? and Where am I going?, when added to the question, How am I living now? are

the three essential issues dealing with past, future and present which man utilizes his dreams to deal with. He gives a series of cases depicting this notion, dream material and associations obtained by his experimental technique. This section of the book gives again a pretty fair summary of the author's approach and he adds interpretive summaries, illustrating his methods.

The final part of the book deals with dream and theory, and here problems of conscience and guilt are first considered. Creative action, basic antinomies and stereoscopic images are briefly considered, and the question of reality and purpose of dreams together with the symbolic language is considered. He finally concludes with a discussion of the principles of dream synthesis, which is a specific outline of his own dream techniques laid out in numbered sentences so that even a beginner may understand. The technique primarily is centered around the use of the dream images and their associations, given much as in a word association technique. The presentation of the material in this chapter makes interpretation appear much more simple than it really is, and perhaps the major criticism of the whole book is the author's relatively finite assertions that this is the only valid discussion on dream interpretation. Certainly his approach is interesting, although not always new, and the book should be productive of considerable value in that it offers some research techniques for checking this and other hypothetical formulations. It is well illustrated, carries an adequate index, and should be widely read.

DOUGLAS M. KELLEY.

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NOTES AND NEWS

AMERICAN PSYCHIATRIC ASSOCIATION

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ILLINOIS PSYCHIATRIC SOCIETY

On May 19, 1954 the following members of the Illinois Psychiatric Society were elected to office for the year of 1954–55:

President

DR. PERCIVAL BAILEY
912 South Wood Street
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Vice-President

DR. FRANZ ALEXANDER
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Secretary-Treasurer

DR. ALEX J. ARIEFF
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THE AMERICAN NEUROLOGICAL ASSOCIATION

At the Seventy-Ninth Annual Meeting of the American Neurological Association held in Atlantic City, New Jersey from June 14–16, 1954, the following officers were elected for the year 1954–1955:

President.....DR. PERCIVAL BAILEY
President-Elect.....DR. J. M. NIELSEN
First Vice-President.....DR. A. R. VONDERAHE
Second Vice-President.....DR. PAUL C. BUCY
Secretary-Treasurer..DR. H. HOUSTON MERRITT
Assistant Secretary.....DR. CHARLES RUPP

MEMORIAL FOR DR. NATHAN SAVITSKY

A great loss was sustained by the untimely passing of Dr. Nathan Savitsky. To honor the memory of this outstanding neuropsychiatrist, scholar and humanitarian, funds are being collected for the establishment of a Nathan Savitsky Laboratory in Neuro-Physiology at the Albert Einstein College of Medicine (now under construction) of Yeshiva University. Communications should be addressed to Dr. W. Karliner, 270 Park Ave., Bldg. A., Room 717, New York City.

FOUR MAJOR POSTS FILLED IN DEPT. OF MENTAL HYGIENE

Four major administrative posts in the State Department of Mental Hygiene were filled by appointments on June 21st by Commissioner Newton Bigelow, M.D.

George F. Etling, M.D., became senior director of Wassaic State School; I. Murray Rossman, M.D., assumed the director's title at Gowanda State Homeopathic Hospital at Helmuth; Herman B. Snow, M.D., became director of St. Lawrence State Hospital in Ogdensburg, and Donald M. Carmichael, M.D., became director of aftercare clinics, a position equivalent in rank to director of a mental hospital.

POSITIONS FOR CLINICAL PSYCHOLOGISTS

The United States Civil Service Commission has announced a Clinical Psychologist examination for filling positions paying $5,940 to $10,800 a year in Washington, D. C., and throughout the country.

Appropriate education and experience is required. No written test will be given. Further information and application forms may be secured at many post offices throughout the country, or from the U. S. Civil Service Commission, Washington 25, D. C. Applications will be accepted by the Commission until further notice.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS

A brilliant array of outstanding leaders in the rehabilitation, health, and welfare fields will participate in the 31st convention of the National Society for Crippled Children and Adults, Nov. 2–5, at Boston's Statler Hotel.

The convention theme, "Rehabilitation for Independence," will highlight the Easter Seal Society's major objective of rehabilitating the

whole person for particiaption in everyday life at home, at school, at work and at play. Judge J. Raymond Tiffany, president of the National Society, will preside at the opening convention session.

John F. Kennedy, junior U. S. Senator from Massachusetts, will give the keynote address: "Rehabilitation, Your Job and Mine." A. L. M. Wiggins, chairman of the board of the Atlantic Coast Line Railroad Company and widely known for his outstanding work as president of the Crippled Children Society of South Carolina, will speak to volunteers of the Easter Seal Society at a special luncheon.